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News Print Industry Continues to Expand

Giant Pulp and Paper Plant to be Established At Prince George, British Columbia, Capable of Producing 600 Tons Daily—International Paper Co. to Double Capacity of Corner Brook Mill, Newfoundland, Within the Next Two Years—To Open Another Pulp and Paper School

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., September 17, 1928.—If a five years' holiday could be declared in regard to the expansion of the news print industry the outlook would immediately be changed from gloom to sunshine. Even with existing mills running at an average of 78 per cent of capacity, there would be little evidence of pessimism, for expansion in the market could be relied upon gradually to take up the slack. The whole trouble is that growth in consumption is all the time being more than counterbalanced by increase in production capacity and every month sees the figure of production in relation to capacity slipping back, notch by notch. Recently in this news letter it was shown how the forthcoming entry of the Provinces of New Brunswick and Nova Scotia into the production of news print on a large scale was complicating the outlook in view of the unrestricted expansion in Ontario and Quebec. The entry of Manitoba into the news print industry has added its quota to the gloom, and this week comes news from British Columbia, on the one hand, and Newfoundland, on the other, which causes additional shivers to chase each other up and down the spines of news print executives.

British Columbia, so Vancouver dispatches state, is not feeling the effects of overproduction to the same extent as eastern plants, and the pulp and paper mills there are running at a high rate of production, with price levels not seriously menacing profits. This happy state of affairs is encouraging the consideration of new projects, and the official announcement is made by the Lands Department of the Provincial Government that a giant pulp and paper industry is to be established at Prince George, including probably the largest paper mill in British Columbia. The Fraser Pulp and Paper Company, which has been negotiating with the Government since 1921 on these plans, is preparing now to go ahead with them, according to advices received from the Hon. F. P. Burden, Minister of Lands and member of the Legislature for Fort George.

While it is denied that the company intends to ship its products to the east, this denial carries no comfort in view of the fact that so much freight is now being brought east via the Panama Canal. The plant will have easy access to tidewater, and the limits of its market cannot be arbitrarily defined.

Preparations for the establishment of a mill capable of producing about 600 tons of pulp and paper a day or more than the entire output of the Powell River Company, have been proceeding quietly in the last few months. The syndicate promoting the scheme has held large timber areas in the Prince George district for many years, but will secure additional stands from the Government, it is understood. Meanwhile surveys of a power site on the Nechaco River were completed a few months ago and found satisfactory. Sufficient power can be secured to operate the mill of the size planned, engineers have reported.

The report adds: "Since 1921 definite steps to establish the mill have been held in abeyance by world paper market conditions. About a year ago an agreement with the Government here seemed assured, but the company decided to suspend action until the world absorbed a large over-production of paper. Since then, market conditions have steadily improved, and conditions are favorable to the project. The Lands Department has been informed no serious obstacle now stands in the way of the scheme."

From Newfoundland, which has splendid access to American and world markets by the cheapest of transportation, namely ocean ships, comes the news that the International Paper Company's plant, now producing 460 tons of news print daily, is planning to double its capacity within two years. The company has eight steamers carrying pulpwood to different points in the United States and two ships engaged in transferring news print to the gulf ports of the United States. Soon, the company will have eight other vessels under charter to handle its output of pulpwood and news print.

Meanwhile, there is some tendency for news print mills to cultivate other lines of products. It is said that the E. B. Eddy Company has switched two of its news print machines over to other grades of paper. The two machines had a news print capacity of 120 tons daily. It is understood also that the plant of the Canada Paper Company at Windsor Mills is going off news print production and will confine its operations to the production of fine paper.

The "Times" Supply of News Print

A highly sensible cooperative arrangement is said to have been effected between the *New York Times* and the Killam interests of Montreal. I. W. Killam, who controls the Mersey Paper Company, now building a large paper mill in Nova Scotia, is also the owner of the *Mail and Empire* newspaper in Toronto. It is said that an arrangement has been effected by which the *Mail and Empire* will be supplied with news print from the new plant of the *New York Times* at Spruce Falls, Kapuskasing, in Ontario, while the same amount of news print will be shipped to the *New York Times* from the Killam mill in Nova Scotia. This will mean a substantial saving in freight costs for both.

Another Pulp and Paper School

A pulp and paper school, the second of its type in the Dominion, has been organized for the town of Edmundston, New Brunswick,

(*Continued on page 74*)

Pennsylvania Mills Report Better Business

Indications are That Improvement Will Continue Rapidly as Fall Advances—Kraft Prices Hold and are Said To Give Evidence of Being Additionally Advanced Later in the Year—Paper Stocks Higher with the Outlook for a Further Improvement in the Market

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., September 17, 1928.—With the mid month the Philadelphia trade bore a brighter aspect in view of the upward swing of business indicating the approaching autumn revival of interest in paper stocks generally. Though the normal seasonal volume of business was not indicated in orders already placed with the distributors there were indications that increased buying will take place shortly as inquiries are for immediate requirements. With shipments pending in the current month the trade is assured of continued activity for the remainder of September. There has beeen much concern over prices and manufacturers complain of the competitive bidding for orders which is taking place among the mills seeking tonnage in the Quaker City markets. Outside competition is keener than it was in the mid summer months and local mills are confronted with strenuous campaigning by manufacturers in the larger paper making centers where plant capacity permits of broader operations and attractive propositions to the wholesale consumers.

Wholesale Markets Ahead of Last Year

Mills have been successful in placing orders for wholesale quantities of paper at this season and the Quaker City representatives of the larger manufacturers in book papers, krafts and specialties for the textile and other trades report the demand in excess of the same period of last year. While distributors have not been able to keep apace with the September orders of 1927 the mill representatives and wholesalers of papers have been forging ahead in a most gratifying manner that encourages an optimistic attitude for the coming fall activity. It is in this class of trade that the competition is most keenly felt by the local manufacturers, whose plants are confined to limited capacity and consequently production costs maintained at narrower margins of profits that will not permit of the levels which the larger mills are able to meet in making quotations on volume orders. There has been a particularly gratifying volume of book papers moving at this time, the larger printers and publishers now preparing for the autumn demands of the commercial world with growing demands for all grades of printed matter needed for the promotion of business.

Converters Active

Paper products of many seasonally active lines have engaged the attention of the converting trade. There are extensions of business in the bag, grease proof, waxed and glassine converting trade as well as in the wall board, fiber and corrugated container and paper box industries. Holiday coverings in tissue, glassines, cartons and fancy wrappings are now being produced to meet the advance orders for the coming Christmas. Greeting card manufacturers are buying freely of the many attractive offerings made by the manufacturers of paper stocks used for the coming holiday. Social announcements and engravers supplies are more active though the volume of business is not yet at the peak attained in the early September of 1927. Advertising specialties and business announcement stocks are in demand and the various grades of papers used for the coming election are popular wares as the threshold of the autumn activity is reached.

Kraft Market Steady

As the mills are well sold up on production for the fall months the kraft market continues to hold steadily to the prices of the past month and with prospects of a further advance as the year wanes. There is a likewise steady tone in the distributive trade and the converting industries. Water proof papers and specially treated grades of krafts continue to show improved demand as the autumn and winter's needs of the consumer are anticipated. The roofing grades and other builders supplies hold fairly well and continue to move in the volume of a normal seasonal trend. Though the demands are increasing the price situation holds to the lower levels of the current year.

Paper Stocks Higher

The outlook for the stock market is more promising and dealers are looking forward to brisker business with the last half of the September month. There has been a general advance of $1 per ton on all grades of paper stocks while a few of the scarcer and better grades of papers have been raised $2 per ton. Mills continue to make inquiries for the immediate future requirements and advance September orders are growing. There is a dearth of the better grades of writing, ledgers, and book papers among the wholesale trade owing to the inroads on accumulations made during the summer months when prices were advanced from 10 to 25 per cent.

As the twine markets show the falling price values the Quaker City is now able to secure cotton grades at from 1 to 2 cents per pound below the quotations of early summer. There has been a weakening of the jute grades as well with a reduction of ½ cent per pound for jute and sisal products since the first of the current month. Demand is spotty though showing slight improvement over the duller dog days.

Paper Trade Association Golf Tournament

Tomorrow there will be staged on the green of the Manufacturers Country Club, at Oreland, Pa., just outside Philadelphia, opening plays in the Annual Tournament of the Philadelphia Paper Trade Association which will be held for the two days of September 18 and 19. Tomorrow morning, the qualifying rounds will be featured in the program while the afternoon will be given over to the Match Play Classes. On Wednesday morning in the Match Play Classes the beaten fours will continue to play for the "consolation prize." Wednesday afternoon the final rounds in the championship for all classes will be staged. In the 18 Hole Medal Play the players will select their own handicap. A blind number between 70 and 80 will be drawn at the luncheon, the player being nearest to the number winning the prize in the low net score. Other prizes are to be awarded winner of each eight and to the winners in the Consolations. The annual dinner is to be given tomorrow night in the Club House. Those who are responsible for the entertainment and sporting event on the Committee are E. A. Weihenmayer, Irwin Megargee, Allen E. Whiting, David Lindsay, Jr., and A. B. Sherrill.

District of Columbia Paper Co. Distributors Meet

With a view to laying before the local distributors of the District of Columbia Paper Company, with headquarters in Washington, D. C., the plans of the manufacturers for the coming season there was held a joint social and business session at the Benjamin Franklin Hotel, last Friday with mill representatives outlining the advertising and sales policies for the remainder of the year. Four firms were represented in the meeting for the Philadelphia territory. They heard during the luncheon hour these plans and policies outlined by W. W. Langtry, sales manager and Robert M. Finlay, advertising manager, who spoke on the cover paper prospects with glowing accounts of the past six months and indications of the increased business for the remainder of the year in these specialties. There was much enthusiasm over the increased business of the past eight months. In the discussion of the future sales and advertising plans announcement was made of the addi-

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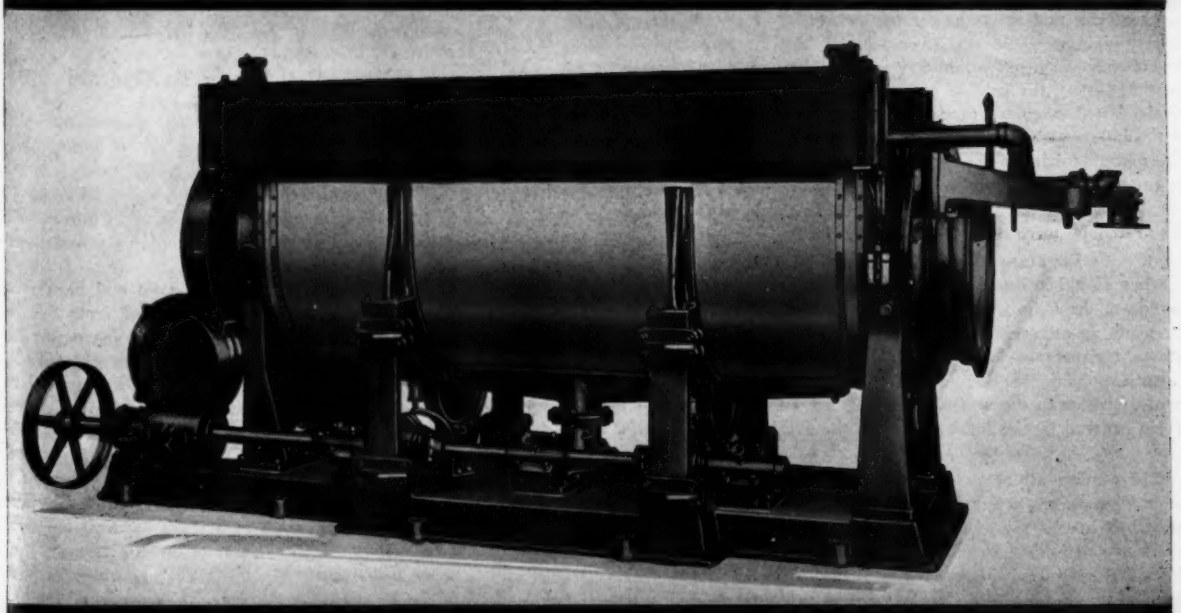

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tion of several new numbers to the line of cover grades made under the District of Columbia Paper Company's mark and which are placed on the list this year. Ten associates of the four Philadelphia distributors were present at the luncheon among them Edward W. Walter and W. S. Wilcox of the Wilcox, Walter, Furlong Company; David Lindsay, Jr., Horace Lindsay, David Lindsay Evans, and Carl W. Magathlin of the Lindsay Paper Company; L. T. Supple, Robert Fishburn and G. Beatty of the Whiting Patterson Company and M. K. Christine of the firm of Raymond & McNutt.

Paper Men at Warren Sales Conference

Philadelphia paper distributors handling the S. D. Warren lines were represented at the annual fall sales conference and social gathering held during the week at Poland Springs, Me., from September 12 to 14. The meeting was held at the S. D. Warren Club House in the Maine resort and was featured with a program of business and sales discussions interspersed with a social schedule of outdoor pastimes including golfing on the adjoining green. Those from the Quaker City trade who journeyed to the conference were President Leon Beck of the Charles Beck Paper Company accompanied by his associate in the firm, Vice-President Andrew Simon and Gustave Johnson of the sales staff. Representing the D. L. Ward Company were President George W. Ward, W. W. Seary and W. H. Hentz of the firm.

George W. Ward Returns From Orient Tour

President George W. Ward who has been absent from his desk in the D. L. Ward Company headquarters, 28 S. 6th street for the past year returned to Philadelphia last week following his tour of the Orient. He arrived in the Quaker City on Wednesday and immediately journeyed to the S. D. Warren Conference held in Poland Springs, Me., that evening. Before making the tour of the Orient he spent several months in Tucson, Arizona, where he underwent treatment for a sinous infection. The tour abroad was for the purpose of further recuperation from this trouble. He is expected back to his desk in the current week.

Ajax Paper Mills Under Auction Hammer

Several Philadelphia paper stocks dealers purchased the supply of tissue papers that were offered for sale under the receivership of the bankrupt firm of the Ajax Paper Mills, of Buck Run, Pa., on September 6. The Samuel W. Freeman Company, of this city, were auctioneers and placed the property, mill equipment and paper stocks and other assets of the mills on the block. The amount of paper sold was over $8,000. The offerings made for the mill property and machinery were rejected as not being sufficient to justify the sale of the realty and units. The mills were involved in bankruptcy proceedings earlier in the year as a result of the improvements made in the electrification and power supply. The manufacturing plant is located near Coatesville, Pa., and was devoted to the production of tissues of many grades. While there were many bidders for the plant and other assets in the realty of the firm none were considered because of the low offers.

Bogalusa Paper Co. Offers New Lines

When Douglas Stuart of the Bogalusa Paper Company made his rounds of the City of Brotherly Love in the past week he offered the trade an attractive line of water-finished krafts in colors, the latest of papers to be added to the list made by the Bogalusa Paper Company, of Bogalusa, La. There is a complete assortment of colors in the new offerings of No. 1 kraft and these were freely ordered by the local dealers in the southern made papers.

Scott Paper Co. Sales Convention

Representing all parts of the nation and distribution of the Scott Tissues, more than 100 salesmen of the Scott Paper Company, met in Chester, Pa., in the early days of September for the series of sales talks, business discussions and advertising propositions that made up the week's program in the annual fall sales convention. Following the series of sales talks the representatives of the various Scott distributing offices scattered throughout the nation were given technical knowledge of the manufacturing of the Scott Tissues and were practically introduced to the methods of production as they were conducted over the plant by experts connected with the company. The group was welcomed by Charles W. Wood, of the company, and following his word of greeting and sales talk the meeting was turned over the First Vice President, Edward S. Wagner, and Harry Liebeck, Second Vice-President, both just returned from a tour of Europe. Vice President Liebeck gave a technical talk and told of the leading pulp and paper industries of the continent which he and Vice President Wagner had visited during the prolonged stay abroad this summer. Mr. Wagner's address was on the subject of "Testing Scott Paper Company—Its Plant, Products and Organization —By International Standards," while Mr. Liebeck spoke on "Tools For Making Quality." A banquet was held at the Penn Athletic Club in this city during the week when President Thomas B. McCabe of the Scott Company addressed the salesmen along with Dr. S. W. Grafflin, of New York.

Fir-Tex Company Elects Directorate

[FROM OUR REGULAR CORRESPONDENT]

PORTLAND, Ore., September 14, 1928.—At the first meeting of the stockholders of the recently organized Fir-Tex Insulating Board Company held in Portland, Ore., September 4, the personnel of the board of directors was chosen as follows. Herbert Fleishhacker, president of the Anglo, London & Paris National Bank, San Francisco; John S. Baker, president of the Fidelity Trust Company and chairman of the board of Tacoma-Oriental Steamship Company, Tacoma; Kenneth D. Dawson, shipping executive of Portland; Charles E. Dant, who is chairman of the board of directors; and Franklin T. Griffith, president of the Portland Electric Power Company.

H. F. McCormick of St. Helens, is president; Mr. Dawson is vice-president; A. E. Millington, vice-president and general manager, and Tom G. Taylor is secretary-treasurer.

Although the project of the company's plant at St. Helens was tentatively announced several weeks ago and several men in the enterprise mentioned, yet incorporation only took place 30 days ago or early in August. Since that time $500,000 in stock subscriptions has been sold, through the Tom G. Taylor Company, and great interest is still manifested in the company's plans.

Co-incident with the election of the board of directors and the business meeting the first week in September, it was announced that plans are now being rushed for the start of the $2,500,000 plant, with completion set for the first big unit in less than a year.

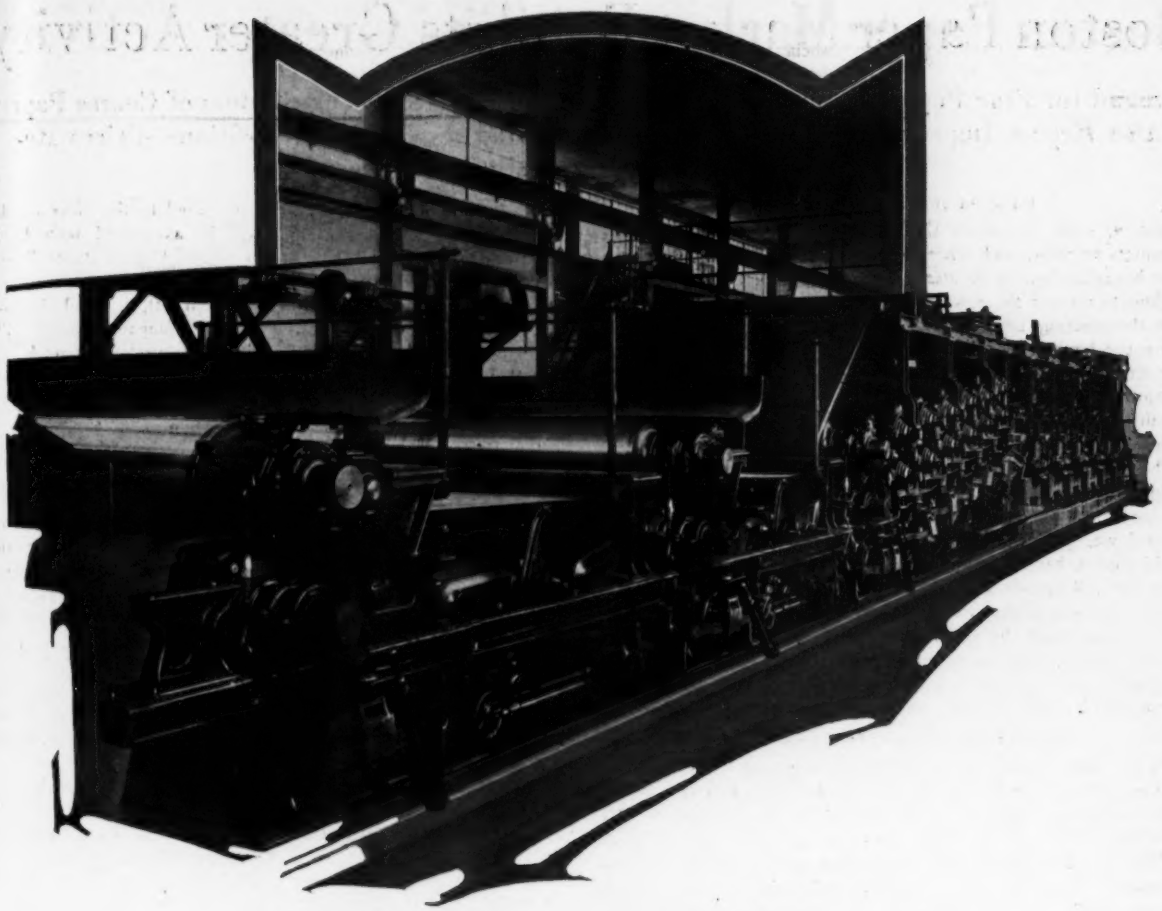
Grays Harbor Mill Ready To Operate

[FROM OUR REGULAR CORRESPONDENT]

PORTLAND, Ore., September 17, 1928.—The new plant of the Grays Harbor Pulp and Paper Company at Hoquiam, Wash., made its first run under operating conditions September 8, when 140 tons of pulp were produced under the supervision of pulp experts and V. D. Simons, head of Simons & Co., Chicago, which firm designed the mill. The tryout was apparently satisfactory, although no official statement was made.

For several days boilers and other equipment had been undergoing initial tests, the first smoke having issued from the huge stack August 28. The chippers are now under construction as is also a second storage tank. The plant is costing $3,500,000. It is thought that the first stock-making run will be in the very near future, various materials for manufacture of pulp now being unloaded at the mill site. High grade limestone from Blubber Bay, British Columbia, to the amount of 500 tons has been landed.

Coincident with the announcement of completion plans of the big pulp mill is the statement that crews are already at work getting out piling for the new mill to be built by the Hammermill Paper Company adjoining the new plant of the Grays Harbor pulp mill. About 6,000 piling are being cut and the mill site is being cleared rapidly. Piling is being shipped from Quinault. It is believed that the new paper plant will be well under way by the first of the year.



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Boston Paper Market Exhibits Greater Activity

Demand for Fine Papers Exceptionally Good For Time of Year—Distributors of Coarse Papers Also Report Improved Conditions—Box Board Industry In Sound Position—Prices Remain Steady In Practically All Lines

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., September 17, 1928.—Opening of schools, political campaign printing, and other activities usual in the fall season have brought about a greater volume of orders for paper. According to reports there was more business during the last week than the previous one. With some houses interest of buyers in fine paper has been particularly strong, one firm noting that the last three or four days of last week showed a greater increase than ordinarily for the time of year, and that business was exceptionally good. Favorable reports are also heard from the wholesalers of coarse paper. Prices are steady in all lines.

The box board market is also showing improvement, box manufacturers placing orders in connection with their fall and winter requirements. The anticipated advance in prices has not developed yet, although talked of for some time.

Old papers, bagging, and rags do not exhibit so much reaction from the fall season as yet. Dealers say that business was not good in August and that September has not picked up. Prices hold at practically the same levels as those of a week ago, although mixed papers have fallen off 50 cents a ton. It is stated that buyers of manila rope, both foreign and domestic, are making attempts to bear the market, but values have remained unchanged.

New England Paper Merchants Meet

That a large delegation attend the semi-annual meeting of the National Paper Trade Association of the United States to be held at Chicago, October 1, was urged at the meeting of the New England Paper Merchants Association at the Harvard Club of Boston, Thursday evening, September 13. An endeavor will be made to have a sufficient number pledge themselves to go to warrant engaging a special car. An increasing representation from New England has been at the meetings from New England each year for some time and it is hoped that will be larger than ever this year. Those who have attended previous meetings at Chicago feel that they receive fully as much bnefit as at the annual meeting at New York, as they come in contact with more merchants and mill men from the extreme West and the Pacific Coast, with whom they exchange much valuable information. Mathew O. Byrne presided. William McLellan, of Carter Rice & Co. Corporation was elected a member of the executive committee in place of Bryant McQuillen, resigned. The firm of Massey & Wendell, Inc., Boston, was elected a member of the association.

News of the Trade

The September "How," A. V. Howland, Tileston & Hollingsworth Company, editor, contains the initial article in the series previously announced, by Judge Henry A. Shute, of "The Real Diary of a Real Boy" fame, entitled "Was a Good Journalist Spoiled When I Became a—Well a Lawyer?" The judge describes his experiences in newspaper work in the early days of his law practice. Among other articles the issue includes one in regard to the favorable reception of Crinoline Super Plate, analyses of the September sheet of the Tileston & Hollingsworth Calendar and one of the August sheet.

Willard F. Dillaway, of the Andrews Paper Company, recently returned on the Cunard liner *Scythia* from a two months trip in Europe where he has been establishing new lines of papers with Belgian and English manufacturers, placing contracts and obtaining agencies that will be of great benefit to the enterprising firm he represents.

E. D. Reynolds, formerly of the Wabash mill of the United Paper Board Company, has been transferred to the office of the Boston agency as salesman and will be associated with E. J. Smith and E. S. O'Neil. The mills of the United Paper Board Company are running full time.

Frank C. Cate, secretary, Frank P. Bartlett, L. C. Bills, and J. L. Livingstone, of the Andrews Paper Company, visited mills in Holyoke, Springfield, and Western Massachusetts last week.

H. P. Bostwick, of the Andrews Paper Company, has returned from a week's trip to Philadelphia, where he attended a salesmen's convention held by the Individual Drinking Cup Company, of Easton, Pa.

Envelope Census

WASHINGTON, D. C., September 19, 1928.—The Department of Commerce announces that, according to data collected at the biennial census of manufactures taken in 1928, the establishments engaged primarily in the manufacture of envelopes in 1927 reported products valued at $55,903,895, an increase of 9.2 per cent as compared with $51,188,914 for 1925, the last preceding census year.

This classification covers all manufacturers whose products of chief value are envelopes of any description, such as plain, window, and other special mailing envelopes and envelopes for filing, wrapping, etc.

Of the 152 establishments reporting for 1927, 32 were located in New York, 21 in Illinois, 17 in Massachusetts, 13 in Pennsylvania, 12 in Missouri, 9 in Ohio, 8 in California, 7 in Minnesota, 4 in Michigan, 4 in Wisconsin, 3 in Maryland, 3 in Virginia, 2 each in Colorado, Connecticut, Kentucky, Nebraska, New Jersey, Texas, and Washington, and 1 each in Georgia, Indiana, Iowa, Tennessee, and Utah.

The statistics for 1927 and 1925 are summarized in the following table. The figures for 1927 are preliminary and subject to such correction as may be found necessary after further examination of the returns.

	1927	1925	Per cent of increase
Number of establishments	152	135	12.6
Wage earners (average number)[1]	9,725	9,052	7.4
Wages [2]	$10,733,890	$9,987,202	7.5
Cost of materials, shop supplies, fuel, and purchased power [2]	$28,920,031	$27,510,913	5.1
Materials and supplies	$28,518,020	(3)	...
Fuel and power	$402,011	(3)	...
Value of products [2]	$55,903,895	$51,188,914	9.2
Value added by manufacture [4]	$26,983,864	$23,678,001	14.0
Horsepower	11,380	10,288	10.5

[1] Not including salaried employees.
[2] The amount of manufacturers' profits can not be calculated from the census figures for the reason that no data are collected in regard to a number of items of expense, such as interest on investment, rent, depreciation, taxes, insurance, and advertising.
[3] Not reported separately.
[4] Value of products less cost of materials, shop supplies, fuel, and purchased power.

Gets Patent on Beating Engine

[FROM OUR REGULAR CORRESPONDENT]

ALBANY, N. Y., September 17, 1928.—John D. Haskell, of Fulton, is among the Northern New York inventors recently granted patents by the United States Patent Office. Mr. Haskell has invented a beating engine. In granting the patent 21 claims for uniqueness of ideas are allowed. His application was filed in May, 1926. The patent has been assigned by Mr. Haskell to the Dilts Machine Works, Inc., at Fulton. The invention is described officially as "a closure for shaft openings in paper stock containers comprising a flexible diaphragm having a gland for receiving the shaft."

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Ontario Paper Mills Operate Close to Capacity

Manufacturers of Book Paper Particularly Active, With Orders Booked Well Ahead—Excellent Demand for Paper Boxes Keeps Board Mills Exceptionally Busy—Production of News Print Curtailed—Pulp Market Unchanged

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., September 17, 1928.—Now that the two weeks show of the Canadian National Exhibition, with its over two million attendance, is over, all lines of business in Ontario are settling down again in preparation for what is already looming up as a good fall trade. Particularly is this true of the paper trade, which profited to a considerable extent before the exhibition opened, but which suffered considerably during its course. With most branches of the paper wholesale trade the first three quarters of the year have been entirely satisfactory and there is every indication that the closing quarter will stack up enough business to make the year a record one.

It has been noticeable in a number of sections of the trade that the looked-for summer slump during vacation period was decidedly less marked. The holiday season has slipped by with very little reduction in sales of most lines of paper and in practically all departments prices have been holding firm. Of course some classes of paper have been subjected to price-cutting but this feature of the industry has been far less pronounced this year than last.

The Canadian Paper Trade Association, which is the paper wholesalers' organization, has been doing a good work in stabilizing the trade, with the result that most sections of the wholesale paper business have been able to run along without vexatious cutting of prices by firms willing to get volume at the expense of profit, while only in a few instances were quotations reduced by reason of the introduction of cheap foreign papers.

There has been some dumping into Canada of light weight papers, such as tissues and toilets, but fine papers and the coarse paper section have not been affected to any great extent. In fact, the light weight paper manufacturers have never done a better business than they have this year. Mills turning out the product are operating close to capacity and the wholesalers are handling large tonnages.

There is a good demand for practically all classes of fine papers, such as book, bonds, writings and ledgers and the outlook for fall trade in these lines is excellent. The coarse paper market is not so active as the fine paper but a fair volume of business is passing both in wraps and paper bags, while kraft sales are keeping up well all across the Dominion, with a fair amount being shipped abroad.

There has been a decided improvement in the paper converting trade. Envelope manufacturing plants are quite busy and are making good requisitions for paper from the wholesalers and mills. There is also a good demand for paper for converting into blank books, forms, etc., while general stationery lines are picking up nicely. A lot of good business is being booked by stationery firms manufacturing fancy stationery, particularly in the line of papeteries for the coming Christmas trade. Travellers have been out for several weeks placing these lines.

In the paper manufacturing industry every department, with the possible exception of news print, is busy and many of the mills are operating at, or close to, capacity. Book mills, for instance, have orders ahead that will carry them well towards the end of 1928 and this condition has existed throughout most of the year. There appears to be a bigger demand for book paper than any other class. On the other hand, the coated paper manufacturers report a rather dull and intermittent call for their stock during the holiday season, although there are signs of a picking up in demand just now. Most of the coated mills, however, have been operating lightly during most of the summer but there are still over three months of the present year to go and there is every confidence that the last quarter will yield enough business to increase the total volume to a figure greater than that of last year. Mills manufacturing manila tag report a fair demand for the product and there is a good call for Canadian-made blanks and blotting.

Most of the board mills are operating close to capacity and some of the wholesalers report inability to get quick delivery of stock. This condition is reflected in a satisfactory degree of activity in the paper box industry which is in a decidedly prosperous condition. There is an excellent demand for all classes of paper boxes, particularly the seasonal lines for standard use by the clothing and millinery trades, while the smaller lines are being manufactured and sold in large quantities. Both folding and set up boxes are enjoying excellent demand, while there is also a good call for corrugated boxes. Whether the paper box industry will get cheaper board when the two board mills on the Toronto water front get into full production it is hard to say. Much of the output, of course, will be handled by the manufacturing firms themselves, but it is generally believed that there will be a considerable surplus for absorption by the paper box making industry.

A section of the paper manufacturing trade that is very busy just now is that devoted to the making of glassine, grease proof and waxing papers. These lines have enjoyed good business all summer and during that time many new uses for these classes of papers have been developed. The printing trade, also, is quite busy, with most of the larger plants operating at capacity and some of them running night shifts, which means that they are making good requisitions for paper, although few of the printing plants are putting in stocks of any size, preferring to buy the paper as they require it.

The pulp market has been strong for the past month and prices generally firm and unchanged. Pulp manufacturers report orders in hand sufficient to cover all they make but none of them have any surpluses on hand. Neither the paper mills nor the pulp mills are stocking. The rag and paper stock market shows very little change. The demands made on the dealers by both book and board mills are losing none of their intensity. Collections, however, have somewhat improved of late and it looks as if there would be no necessity to increase prices.

New Paper Warehouse for Lake Front

The Toronto Harbor Commissioners announced this week the completion of negotiations with the Victoria Paper and Twine Company, Ltd., Wellington street West, for the acquisition of a Fleet street location as a site for a new warehouse to be erected by the company. The site which has been acquired is located on the south side of Fleet street, some 600 feet west of York street, and has a frontage of 84 feet by a depth of 133 feet. The new warehouse will practically cover the whole parcel. Leo P. Charles, president and managing director, states that in deciding to locate on Fleet street, the Victoria Paper and Twine Company, Ltd., had in mind the wonderful future that lies ahead of Toronto, made possible by the development work already undertaken and that planned for the future by the Toronto Harbor Commissioners.

Finlayson Opens Spruce Falls Mill

The Hon. William Finlayson, Ontario Minister of Lands and Forests, represented the Ontario Government at the official opening of the Spruce Falls Pulp and Paper Company's 550-ton mill at Kapuskasing, Ont., on September 18 and 19. A number of the executives of the *New York Times*, which is affiliated with the Kimberley-Clark people in the construction and operation of the

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FOR MORE THAN 75 YEARS

WALDRON Paper Rolls

As a result of comparing utilization costs, the world's leading users have for long standardized on WALDRON Rolls to insure better embossing at minimum roll costs.

UTILIZATION COST

is determined by comparing the initial cost of a roll to the actual number of operating hours of service or the yardage run secured from the roll.

Keeping such a record prevents excessive roll costs.

WRITE FOR INSTRUCTION SHEET On How A Paper Roll Should Be Run In

Copy Sent on Request.

For nearly a century, the name WALDRON has been known for perfection in embossing equipment and mastery in the science of designing and building embossing rolls.

No element in embossing equipment is so subject to varying quality as the paper roll. Yet in none is quality so important. The keenest embossing experts know the futility of judging roll construction and quality by appearance. By specifying Waldron Paper Rolls they are certain of paper quality, sufficient compression, properly proportioned heads and shafts, long life and economical operating service.

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MAIN OFFICE AND WORKS, NEW BRUNSWICK, N. J.

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huge news print mills, were also on hand for the opening. Present plans call for the getting under way of the company's power development at Smoky Falls at an early date. The event aroused widespread interest in the North Country.

E. W. Backus, first vice-president of the Great Lakes Paper Company, Ltd., a few days ago paid a visit of inspection to the new mill at Fort William and expressed himself as well pleased with the work of the machines and staff. The party were visiting Northern Ontario on a pleasure trip and took occasion to look over the plant. Joseph Dwyer, superintendent of the mill, accompanied Mr. Backus on his tour of inspection and in the party with him were Mrs. Backus, Mr. and Mrs. Ted Lewis, Mr. and Mrs. Wirt Wilson, Mr. and Mrs. F. R. Newman, of Minneapolis, and Mr. and Mrs. Frank Jewne, of International Falls. In addition to being a director of the Great Lakes Paper Company, Mr. Backus is connected with several power and pulp and paper organizations, while Mr. Lewis is associated with the C. J. Lewis Company, Minneapolis, and Mr. Wilson with the Wirt Wilson Company, Minneapolis. Mr. Jewne is an associate of the Ontario and Minnesota Paper Company at International Falls and Mr. Newman is vice-president of the Soo Line Railway.

Notes and Jottings of the Trade

The many friends in the paper industry of Harry Wells, president of the Canada Printing Ink Company, Ltd., Toronto, will regret to learn of his continued serious illness. Mr. Wells has been away most of the summer endeavoring to regain his strength, but recently in Toronto he underwent blood transfusion and is still in a serious condition.

A number of the paper wholesalers who are members of the Toronto Typothetae have applied for reservations for the annual convention of the United Typothetae of America, which meets next month in Quebec City. President A. L. Lewis, of Toronto, states that already well over 600 prospective delegates have applied for reservations.

C. E. French, of the Toronto office of the Howard Smith Paper Mills, Ltd., took a prominent part in the receiption of a squadron of American fliers which visited the Canadian National Exhibition in Toronto last week. Mr. French himself is an enthusiastic airman and is a member of the Toronto Flying Club, as well as being on the reserve of the Canadian Air Force.

Barber-Ellis, Ltd., Toronto, manufacturers of envelopes and stationery, have opened a new branch in Regina, Sask. Mr. Hutchinson, who has been assistant manager of the firm's Winnipeg branch, will be manager at Regina. The company will carry a full line of printers' supplies and stationery at Regina, carrying on their established policy of giving prompt service to their customers in Western Canada.

Harold Crabtree, of Montreal, managing director of the Howard Smith Paper Mills, Ltd., was in Toronto a few days ago on details connected with the merger of the Lincoln Pulp and Paper Company, Ritchie and Ramsay, and the Georgetown Coated Paper Company, noted recently in these columns.

John Martin, of Provincial Paper Sales, Ltd., Winnipeg, was a business visitor in Toronto a few days ago.

Government Officials Visit Envelope Plant

DAYTON, Ohio, September 17, 1928.—The Mercantile Corporation on Front street which has the contract for furnishing Government stamped envelopes and wrappers was inspected the latter part of the past week by most of the county treasurers of Ohio who met here in annual convention.

The delegates forming the State Association were accompanied by their wives and members of their families and were directed by W. E. Sparks, treasurer of Montgomery county.

The treasurers were met at the factory by Howard F. Marsden, general manager of the Mercantile Corporation, who personally escorted them about the plant. Some of the treasurers made their stamped envelopes and evinced keen interest in the enterprise.

Black-Clawson Co. Busy

[FROM OUR REGULAR CORRESPONDENT]

DAYTON, Ohio, September 17, 1928.—Few Miami Valley concerns have made greater progress during the past year than the Black-Clawson Company of Hamilton, which some time ago acquired the Shartle machine plant of Middletown.

The company now is preparing for even still greater expansion, it is reported and it promises to continue to be one of the leading manufacturers of papermill and pulp mill machinery in the United States.

Those who have been familiar with the operations of the company recall that one year ago the Black-Clawson Company gave employment to 450 men. Now the plant, which is located at the corner of Second and Vine streets, Hamilton, is giving employment to 550 men. This is a most substantial increase in the working force in one year's time and indicates that the company has been doing its share of business in supplying modern mill machinery for American concerns.

Recently the company acquired by purchase a tract of land adjoining the plant of the present works, and which was owned by the Niles Tool Works Company. The purchase was made with the view of the erection of additional buildings.

This recalls the company only recently completed an addition to the foundry, which has made possible the increase in employment by 15 per cent and has afforded an increased floor space, approximately 20 per cent and a similar increase in crane capacity. The floor space in the new pattern storage building has been increased 30 per cent.

Naturally, these increases would have been impossible had not the general business of the concern increased correspondingly.

In addition to the above changes, the casting delivery system has been rerouted from the foundry to the machine shop, and this makes for increased efficiency.

Among the many new improvements at the plant are a new type generator which aids gear cutting; three new turret lathes, one screw machine, and installation of a balancing machine for the balancing of rolls.

A new first-aid room has been equipped in the latest manner. A new water system runs throughout the plant and water is pumped from a driven well. The pump is an automatic one and requires no supervision.

It is interesting to note, in these days of doubtful or "spotty" prosperity, that the Black-Clawson Company has been operating at night. These night shifts have been working for one year.

It is generally regarded here as the one most vital reason for the growth of the company was the purchase some time ago of the Shartle Brothers Machine Company's plant at Middletown.

At this branch factory, paper mill accessories and specialties are manufactured, and the operation of the Paper City plant has added wonderfully to the business of the old, established Hamilton concern. The foundry work of Shartle Brothers is sent to Hamilton where modern equipment enables the prompt and efficient handling of the product.

George & Sherrard Paper Co. To Expand

WELLSBURG, W. Va., September 17, 1928.—H. B. Sheesley, general manager of the International Paper Company, owner of the George & Sherrard Paper Company of Wellsburg, spent several days here recently in going over plans for additions and improvements which are being made.

A huge quantity of kraft paper, shipped from Bastrop, La., will enable the local concern to engage in the manufacture of the multi-wall bag on a larger scale than heretofore. Another shipment has been started up the river.

Any idea that the local concern would abandon the manufacture of paper may be repudiated by numerous alterations now being made for that purpose. The company is practically reconditioning all of its machinery for paper making and making several additions in a building way.

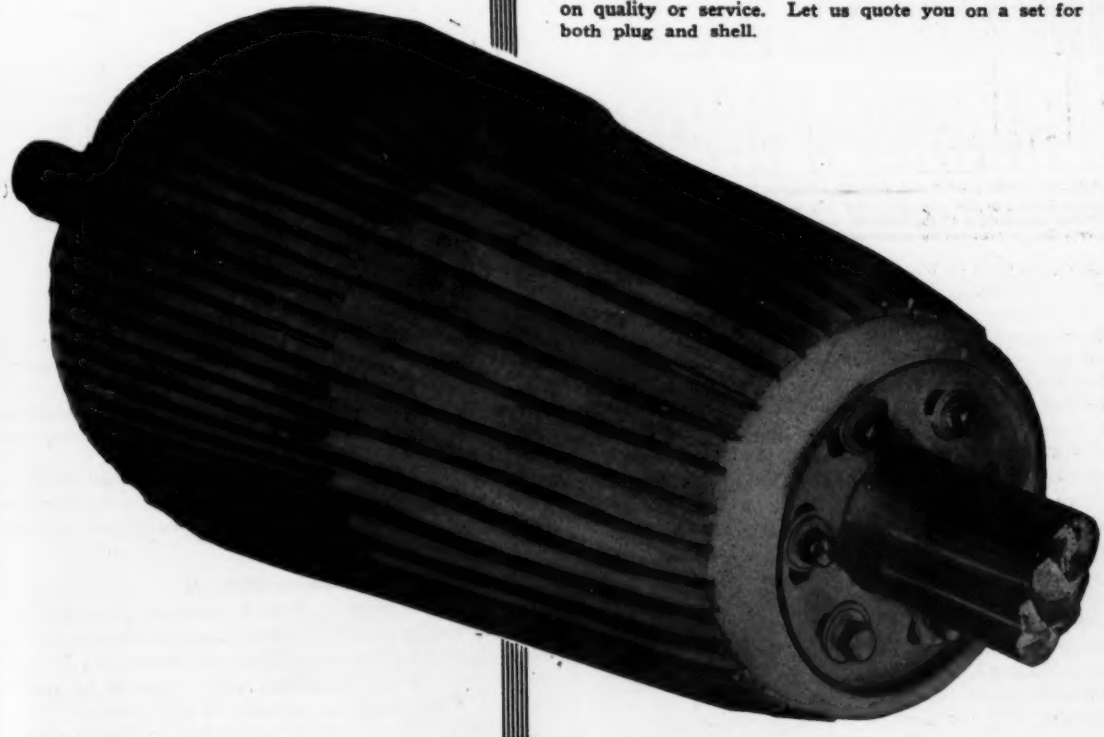
Broken Edges and Corrosion Eliminated

with Hy-ten-sl Knives

Do you have to screw up your Jordan Plugs frequently, to assure correct and uniform stock treatment? Are you troubled with rust spots in your stock or injury to felts from rust particles? If so, following are a few reasons why you should equip your Jordans with Hy-ten-sl Bronze Knives.

Hy-ten-sl is the toughest, strongest and best wearing bronze on the market,—far exceeding steel and other bronzes in these respects. Hy-ten-sl Knives do not corrode along the back leaving only a thin cutting edge. They do not burr or wear rapidly necessitating frequent replacements. They maintain a uniform stock treatment during their entire service life with practically no attention, and successfully resist the corrosive action of acids and chemicals encountered in the paper mill.

Hundreds of Jordans are equipped with Hy-ten-sl Knives, and we have not yet heard a single complaint on quality or service. Let us quote you on a set for both plug and shell.



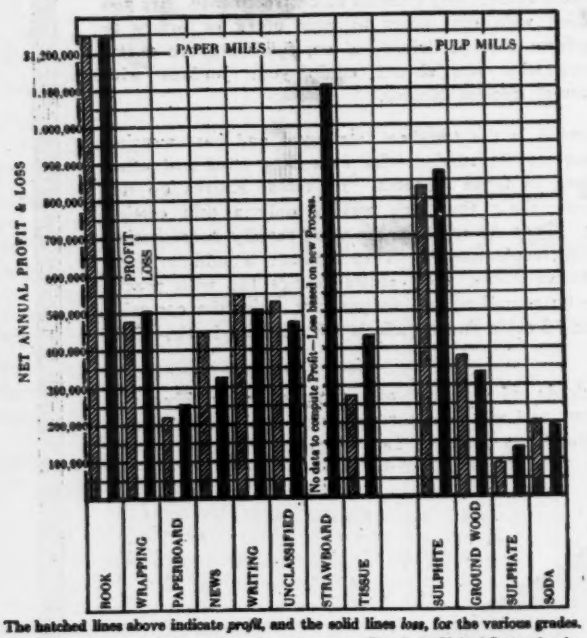
American Manganese Bronze Co.
Holmesburg, Phila., Pa.

Profit and Loss in Fiber Utilization

By C. M. Baker, Engineer, American Paper and Pulp Association.

An annual saving of $5,261,615 in fiber utilization is commendable, but a potential loss of $6,389,167 annually is deplorable, and should focus the attention of every mill executive and official on ways and means to convert this loss into a profit. The above figures are conservative estimates based upon data secured from question naires sent out to the industry last December, and to which 46 per cent of the total tonnage replied. The profit and loss in the different grades is shown graphically in the accompanying diagram and given in detail in Table VI.

Six years ago the Technical Association of the Pulp and Paper Industry appointed a committee on wastes which has published



The hatched lines above indicate *profit*, and the solid lines *loss*, for the various grades. The total net annual profit to the pulp and paper mills of the United States in the utilization of fibre is estimated at $5,262,000 while the value of fibre now lost which might be recovered through practical and economical processes is $6,389,000 annually.

PROFIT AND LOSS IN FIBER UTILIZATION, PULP AND PAPER INDUSTRY, 1928

some excellent reports and valuable information in its various journals and publications. R. B. Wolf, chairman of this committee in 1922 stated:

"The fiber loss per 1,000 gallons of white water going to the sewer is of course influenced by the volume of water per ton of paper. Under good operating conditions this should not exceed an attainable standard of 0.5 of a pound per 1,000 gallons, and in the manufacture of some grades of paper should be even less."

That these results are being secured is indicated by answers from a number of the mills, white water losses of less than 0.5 of a pound per 1,000 gallons being reported in several instances. Mr. Wolf also stated:

"The production of all grades of paper in the United States for the year 1922 was practically 7,000,000 tons. Even one per cent saving at an average figure of $30 per ton represents a saving of over $2,000,000. A conservative estimate indicates that an average reduction of 5 per cent of the waste water losses is possible."

His estimates thus indicated an annual saving of $10,000,000. G. D. Bearce, Chairman of the committee in 1926, stated:

"The estimated average loss throughout the industry divided into grades is approximately as follows: Wrapping, 5 per cent; news, 7 per cent; tissue, 10 per cent; board, 10 per cent; and book, 15 per cent. Assuming that it takes 110 tons of furnish to produce 100 tons of finished paper, and that 80 per cent of the excess furnish is recoverable, the amount of paper making material that can be reclaimed is 8 tons per day. If the stock is valued at $40 per ton, it represents a loss of $320 per day, or approximately $100,000 per year."

These statements and estimates are corroborated by the more recent questionnaires. Although it is probable that considerable progress has been made since, there still is much to be done.

Basic Data

The figures given in the opening paragraph of this article, and to be presented and discussed more in detail, are based upon questionnaires sent out in December, 1927, in which information was requested regarding expenditures made for white water utilization and the results secured therefrom. While the replies were in many cases incomplete, an abundance of data was presented on which to base computations of actual savings and losses. Some mills reported the actual expenditure for equipment, while others indicated the type of equipment installed, but gave no actual expenditure; some reported the actual financial return from the installation, while others reported the recovery of so many pounds or tons of fiber, or stated that the fiber losses had been reduced so much per 1,000 gallons of waste, but failed to indicate the total volume of wastes. Furthermore, the data presented usually consisted of total figures for the mill, or sometimes group of mills, as a unit without regard to grades, so that in making classifications it has been necessary to apportion the results to the different grades. Because of the incompleteness of the data it has therefore been necessary to make certain assumptions as follows:

1. In adjusting the expenditures and returns to the various classifications or grades the expenditures for equipment and installations to recover and utilize waste fiber have been considered directly proportional to the daily tonnage capacity, but the returns have been weighted in proportion to the value of the recovered material.

2. The assumed value of materials per ton has been as follows: Book, wrapping, and tissue, $40; news and unclassified, $25; writing, $60; strawboard and paperboard, $20. Pulp values have been taken as sulphite and sulphate, $40 per ton; soda, $45; and groundwood, $15.

3. Where fiber losses or recovery have been given per 1,000 gallons it has been assumed that the volume was 20,000 gallons per ton of product.

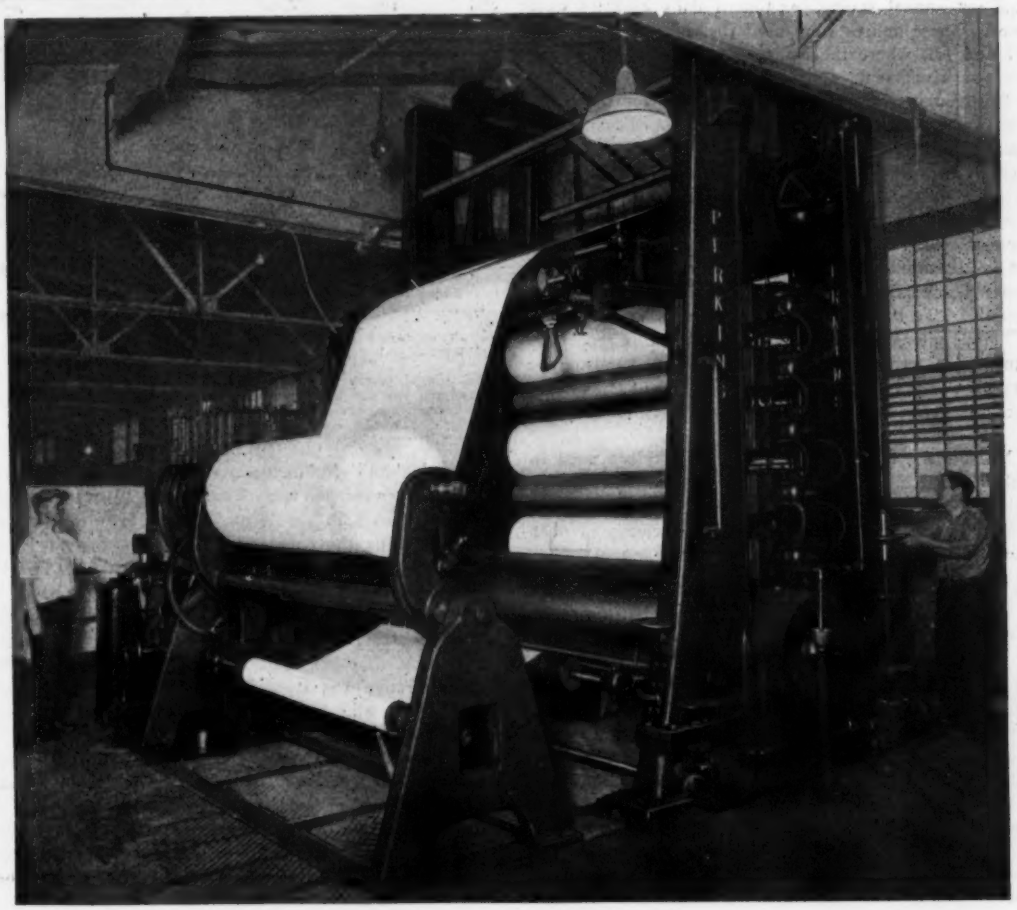
4. In computing net returns or losses, 25 per cent of the original expenditure has been allowed to cover interest, overhead, operation, etc.

5. In mills not reporting it has been assumed that their efficiency in fiber utilization is 25 per cent. This is less than the mills reporting, but it is probable that the more efficient mills have reported more completely.

Computation Methods

Data furnished by mills considered efficient in fiber utilization and of such completeness as to permit reasonably accurate determinations, have been used to compute unit figures as a basis for determining the savings and losses, where essential information was lacking. The method of computation and tabulation is indicated in Tables I, II, and III, for book mills. In Table I, Column No. 1 contains numbers assigned to the mills for reference. The next column gives the estimated daily tonnage capacity of the particular mill for book, the third, the amount expended for fiber

"NO CALENDER CAN BE BETTER THAN THE ROLLS IN IT"



Perkins Roller Bearing Web Super-Calender

This Perkins seven-roll Web Super-Calender, operating in a mill in Ohio, has proved itself highly efficient in production, easy in operation and low in power consumption. The top and bottom rolls are fitted with ROLLER BEARINGS; the intermediate roll bearings are water cooled. The drive is direct connected, of the single motor dual frequency type.

Into this Roller Bearing Calender Perkins engineers have built the rugged strength necessary for smooth, steady operation under the most severe working conditions. The calender, equipped with Perkins rolls, is effecting a definite saving and finishing paper in the *most satisfactory way it can be done.*

B. F. Perkins & Son, Inc., Holyoke, Mass.

COTTON ROLLS
PAPER ROLLS
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CHILLED IRON ROLLS
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WEB SUPERCALENDERS
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EMBOSSING CALENDERS
SHEET CALENDERS
PLATERS
MULLEN PAPER TESTERS
TENSILE TESTERS
VENTILATING FANS
RAG CUTTERS
STOCK CUTTERS
PAPER DAMPENERS
BLEACH EJECTORS

utilization, and the fourth and fifth, the return upon the investment. Below the table allowance is made for interest, overhead, and operation, and the net annual saving determined. The expenditure and net annual saving per ton of daily capacity were then computed. These figures were used for computing the data in Tables II and III, where the information available from the questionnaire was insufficient.

The first five columns of Table II present data for the inefficient mills reporting, similar to that in Table I for efficient mills. Columns 4 and 5, however, are largely computed from the average gross per cent return indicated in Table I. In Column 6 a percentage of inefficiency, based upon the type of equipment and other data furnished by the questionnaires, is assigned to the mill, and from this the "Inefficient Tonnage Equivalent" indicated in Column 6 is computed. Below, the 25 per cent allowance for interest, overhead, operation, etc., is deducted, and the net annual saving determined. To this is added the saving for efficient mills from Table I, thus giving the total net saving for mills reporting. The total inefficient tonnage equivalent multiplied by 490, the net annual saving per ton of daily capacity for efficient mills from Table I, gives the net annual loss due to inefficiency in mills reporting.

In Table No. III the data from Tables I and II are used in computing the information for all book classification. Under Item No. 1 is given the per cent of total tonnage replying to the questionnaires, in No. 2 the estimated per cent efficiency in fiber utilization, and in Item No. 3 the estimated total net annual saving and loss for all book mills.

Summary Data

The detailed data for book mills discussed above are presented to illustrate computation methods, and, while similar data were prepared for all classifications, they are not included in this paper. The data for all classifications, however, are summarized in Tables IV, V, and VI. In these tables, also in the diagram showing profit and loss and to which reference has previously been made, the grades or classifications are arranged in the order of total valuation of product.

From Table IV for efficient mills it will be observed that the amount expended per ton of daily capacity for individual mills ranged from $55 for paperboard to $345 for book mills, while for all the figure was $141. For pulp mills the range was from $95 for groundwood to $240 for sulphate, and $143 for all pulp mills. For both paper and pulp mills the expenditure per ton of daily capacity was $142. The net annual return per ton of daily capacity ranged from $56 for paperboard to $690 for tissue, being $230 for all paper mills. For pulp mills the range was from $94 for groundwood to $262 for sulphite, and $154 for all. For both paper and pulp mills the net annual saving was $201 per ton of daily capacity. The maximum gross returns for individual mills, both paper and pulp, range from 356 per cent to 2,420 per cent, the minimum from 15 per cent to 108 per cent, and the total for each classification from 71 per cent to 544 per cent. For all mills the gross return was 236 per cent.

TABLE 1
COMPUTATION METHODS
CLASSIFICATION—BOOK
MILLS REPORTING EFFICIENT UTILIZATION

Mill No.	Daily tonnage capacity	Total expended	Return on investment — Total	Return on investment — %
27½	86	$2,880	$46,400	1,570
184	37	21,000	24,000	114
187	60	6,280	11,580	184
89	161	7,250	58,000	800
102	100	32,740	12,000	37
112	42	20,000	28,200	141
167	70	5,320	42,200	792
169	450	254,200	314,000	123
208	40	11,000	62,200	611
Totals	1,046	$360,670	$603,580	167
Less 25 per cent of expenditure for interest, overhead, operation, etc.			90,168	
Net annual saving for mills reporting			$513,412	
Expenditure per ton of daily capacity			$345	
Net annual saving per ton of daily capacity			$490	

TABLE 2
COMPUTATION METHODS
CLASSIFICATION—BOOK
MILLS REPORTING INEFFICIENT UTILIZATION

Mill No.	Daily tonnage capacity	Total expended	Return on investment — Total	Return on investment — %	Inefficiency — %	Inefficiency — Ton Eqv.
14	12	0	0	0	100	14
...	350	$5,000	$8,350	167	50	175
32	100	5,000	8,350	167	80	80
178	20	12,000	20,000	167	25	4
52	280	0	0	0	100	280
56	33	1,870	3,120	167	33	11
66	18	3,000	5,010	167	50	9
185	60	21,100	35,200	167	10	6
101	595	167,000	279,000	167	25	149
113	30	1,000	1,670	167	60	18
114	35	0	0	0	100	35
118	84	85,700	143,000	167	0	0
126	35	36,800	4,100	11	0	0
134	17	0	0	0	100	17
161	65	9,050	15,100	167	20	13
205	20	4,864	8,110	167	50	10
Totals	1,750	$352,384	$531,010	151		824
Less 25 per cent of expenditure for interest, overhead, operation, etc.			88,096			
Net annual saving for mills reporting			$442,914			
Net annual saving for efficient mills			513,412			
Total annual saving			$956,326			
Net annual loss due to inefficiency of mills reporting, 824 × 490 =			$403,760			

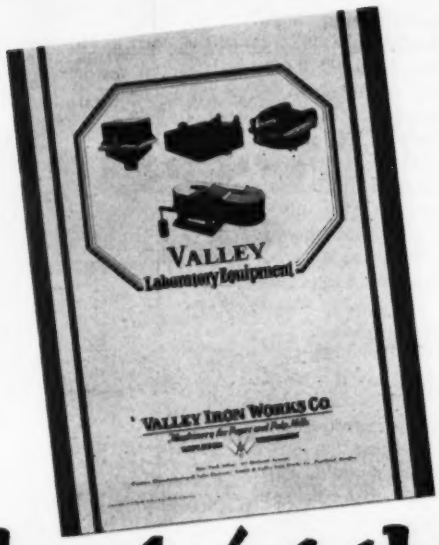
From Table V for inefficient mills it will be observed that the amount expended per ton of daily capacity ranged from $34 for paperboard to $216 for writing, being $106 for all paper mills. For pulp mills the corresponding figures ranged from $41 for groundwood to $196 for sulphite; $151 for all. For both paper and pulp mills the expenditure was $120 per ton of daily capacity as compared with $142 for efficient mills. The net annual return per ton of daily capacity ranged from $29 for paperboard to $508 for writing, in paper mills, with a total of $147, while for pulp mills the range was from $38 for sulphate to $206 for sulphite, with $148 for all. For both paper and pulp mills the total return was $148 as compared with $236 for the efficient mills.

In some few instances the expenditure in the inefficient mills was approximately equivalent to, or slightly in excess of that reported in the efficient mills. This is probably due to the installation of inefficient equipment or certain local conditions. The estimated net annual loss due to inefficiency in the mills reporting range from $37,300 in wrapping to $1,110,000 in strawboard, with a total for paper mills of $2,035,617. The estimated loss for the straw board mills is based upon a new process recently developed, which it is reported will reduce the cost of production $3.00 to $4.00 per ton. Approximately $1.00 per ton, however, is all that has been allowed in the estimate. The net loss in pulp mills ranged from $21,168 for sulphate to $140,432 for sulphite, with a total of $322,486. The total for both paper and pulp mills reporting was $2,358,103.

Table No. VI presents similar data to that previously discussed for the industry as a whole including estimates for mills not re-

TABLE 3
COMPUTATION METHODS
CLASSIFICATION—BOOK
ESTIMATED TOTAL FINANCIAL RETURN AND LOSS IN FIBER UTILIZATION

1. Total daily tonnage capacity of all book mills		5,070
Total daily tonnage capacity mills reporting efficient utilization (Table 1)	1,046	
Total daily tonnage capacity mills reporting inefficient utilization (Table 2)	1,750	
		2,796
Total daily tonnage capacity mills not reporting		2,274
Per cent of total tonnage reporting, 2,796/5070 =		55%
2. Assuming an efficiency of 25 per cent in mills not reporting:		
Efficient tonnage equivalent mills not reporting		568
Efficient tonnage equivalent mills reporting:		
1046 (Table 1) + (1750 — 825) (Table 2) =		1,972
Total efficient tonnage equivalent		2,540
Total inefficient tonnage equivalent		2,530
Total per cent efficiency = 2540/5070 =		50%
3. With net annual saving per ton of daily capacity		$490
Estimated net annual saving in all book mills =		
2540 × 490 (Table 1) =		$1,244,600
Estimated net annual loss due to inefficiency:		
2530 × 490 (Table 1) =		$1,239,700



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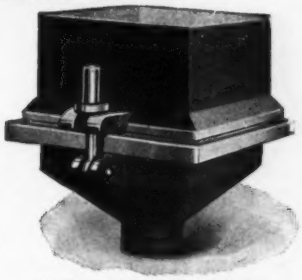
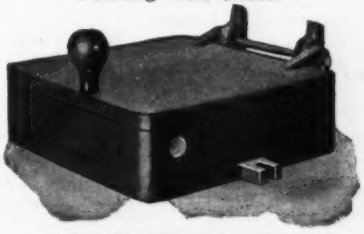
Tests on both experimental beaters and sheet making equipment in eleven mills throughout the country are of interest to every mill executive—two of the charts shown in the new Valley Laboratory Booklet just off the press.

General and specific information on laboratory equipment is covered thoroughly in this booklet. It represents the cumulative results of our years of experience making laboratory equipment —now in use in 100 mills.

In addition to a complete description of the three pieces of equipment illustrated here, this new booklet contains a detailed description of all Valley Laboratory Equipment. It is a booklet you will want to file for future reference—cover printed in the colors of the equipment itself—contents copyrighted. Write for it today.



Valley Sheet Mould for Forming Test Sheets



Valley Hot Plate for Drying Test Sheets

Valley Hydraulic Press for Removing Water from Sheets

VALLEY IRON WORKS CO.

Machinery for Paper and Pulp Mills

APPLETON WISCONSIN

New York Office: 350 Madison Avenue

Western Manufacturing and Sales Division: Smith and Valley Iron Works Co., Portland, Oregon

porting. It will be observed that the net annual saving ranged from $271,860 for tissue to $1,244,600 for book, while the net annual loss ranged from $253,568 for paperboard to $1,239,700 for book. In the pulp mills the total saving ranged from $92,512 for sulphate mills to $843,116 for sulphite, with a total of $1,519,068, while the loss ranged from $137,088 for sulphate to $874,556 for sulphite mills, with a total of $1,538,284. Considering the industry as a whole, 46 per cent of the total tonnage replied to the questionnaires, and it is estimated that the efficiency in fiber utilization is 46 per cent. The total saving to the industry at the present time in the utilization of fiber is estimated to be $5,261,615 annually, while the potential loss due to inefficient utilization is estimated to be $6,389,167.

Discussion

While it has been necessary to make certain assumptions and fill in considerable missing data, it is believed that if the results are erroneous they are on the side of conservatism. First, the degree of efficiency has not been considered 100 per cent, or even what will be probably, ultimately a practical attainment, but rather an efficiency on which the more progressive mills are now actually operating in the different grades. Second, the prices used in estimating the value of the recovered material were low. Third, liberal allowances have been made in all cases.

Regardless of the factor fiber wastes may be in stream pollution, it seems essential that the industry proceed without delay to utilize this great economic loss. Directly or indirectly, however, fiber wastes do result in objectionable stream pollution. The accumulation of fiber on the beds of streams interferes with the spawn and spawning of fish. Furthermore, it frequently causes unsightly conditions. It is the visible evidence of pollution which will more quickly attract attention and adverse criticism than almost any other type. There is no question but that this source of stream pollution can be eliminated to the financial advantage of the industry.

Research will be necessary in order to realize the best results, particularly in certain grades of papers, and where frequent changes in color are made. A type of save-all or equipment applicable to one mill may not be suited to the conditions of another. Therefore, careful investigation should be made by each individual mill before installing equipment in order that the best results may be secured with a minimum expenditure. Recirculation of the effluent from save-alls to the showers and other parts of the system is sound and logical practice. It is believed that, at least in some branches of the industry, methods will be developed whereby the white water will be recirculated through the system without passing through savealls. In other words, there will be developed closed systems whereby the white water will be used on the showers without removal of the fiber, and the fiber will be carried directly back into the sheet with no loss to the sewers. In fact, this is substantially the new method developed in the straw board industry.

TABLE 5
SUMMARY
MILLS REPORTING INEFFICIENT UTILIZATION

Class	Mills reporting: No.	Mills reporting: Daily ton. cap.	Amount expended: Total	Amount expended: Per ton	Return on investment: Total	Return on investment: Net	Return on investment: Per ton net	Net loss due to inefficiency
PAPER MILLS								
Book	16	1,750	$352,384	$201	$531,010	$442,914	$253	$403,760
Wrapping	10	431	43,930	99	64,050	53,068	123	37,300
Paperboard	39	3,421	116,555	34	127,128	97,989	29	122,696
News	9	593	49,160	83	102,262	89,972	152	51,471
Writing	16	466	101,191	216	262,770	237,472	508	132,459
Unclassified	17	703	126,760	180	207,880	176,190	251	84,091
Strawboard	Insufficient data to make computations.							*1,110,000
Tissue	9	151	9,600	64	13,392	10,992	73	93,840
Totals	116	7,515	$799,580	$106	$1,308,492	$1,108,597	$147	$2,035,617
PULP MILLS								
Sulphite	19	1,327	$258,012	$196	$338,240	$273,740	$206	$140,432
Gr. wood	15	699	28,610	41	45,205	38,053	54	42,206
Sulphate	4	250	20,900	84	14,840	9,615	38	21,168
Soda	12	984	185,403	188	208,002	161,651	164	118,680
Totals	50	3,260	$492,925	$151	$606,287	$482,059	$148	$322,486
TOTAL, PAPER AND PULP MILLS								
Totals	166	10,775	$1,292,505	$120	$1,914,779	$1,590,656	$148	$2,358,103

* Computations based upon new process.

The ultimate goal which should be the aim of every paper and pulp mill is undoubtedly a closed system, whereby all the fiber is utilized, and no effluent white water enters the stream. This is not an idealistic goal, but is practical and, in some few mills, is now almost, if not quite, attained. Troubles that have been experienced in the past in the control of slime later experience indicates can be overcome either by sterilization with chlorine or by coagulation, or a combination of the two methods.

Conclusions

In conclusion there can be no question but that there is now a tremendous economic loss in the pulp and paper industry, due to inefficient fiber utilization. These wastes constitute a serious factor in stream pollution. Their utilization to the fullest extent will correct this objectionable condition, and result in material financial saving to the industry. Research will be necessary in certain branches of the industry to secure the best and most economical results. Care should be exercised in the selection and installation of equipment in order to be sure that it is adaptable to the conditions of the particular mill, and that the best results may be secured with a minimum expenditure. A careful, earnest, scientific study of the problem and application of the results to its solution, however, will result in a substantial financial return to the industry and elimination of fiber wastes as an objectionable factor in stream pollution.

Walter J. Mills Passes Away

Walter J. Mills, beloved husband of Sophia F. Mills, died last Thursday, September 13. Mr. Mills had been connected with the Berlin & Jones Company, Inc., manufacturers of commercial envelopes and general paper merchants, of 547 West 27th street and 347 Fifth avenue, New York, for the past 40 years

TABLE 4
SUMMARY
MILLS REPORTING EFFICIENT UTILIZATION

Class	Mills reporting: No.	Mills reporting: Daily ton. cap.	Amount expended: Total	Amount expended: Per ton	Return on investment: Total	Return on investment: Per ton Net	Per cent: net	Per cent: Mx.	Per cent: Mn.	Per cent: Tot.
PAPER MILLS										
Book	9	1,046	$360,670	$345	$603,580	$513,412	$490	1570	37	167
Wrapping	17	1,301	210.210	161	307,540	255,018	196	1580	24	146
Paperb'd	9	1,913	105,890	55	106,460	79,988	56	829	15	101
News	6	1,926	157,800	82	329,290	289,840	171	575	49	208
Writing	5	378	48 040	127	261,050	249,040	659	2420	108	544
Unclassif'd	8	953	136,150	143	278,270	244,232	293	1050	107	204
Strawb'd	Insufficient data to make computations.									
Tissue	4	214	70,600	330	165,700	148,050	690	356	100	234
Totals	58	7,731	$1,089,360	$141	$2,051,890	$1,779,580	$230	2420	15	265
PULP MILLS										
Sulphite	15	1,493	$289,610	$194	$465,170	$392,770	$262	560	37	161
Gr. wood	17	2,752	260,470	95	323,075	257,958	94	623	31	124
Sulphate	7	420	100,850	240	71,180	46,968	112	409	24	71
Soda	2	170	39,940	234	53,900	43.915	258	570	37	135
Totals	41	4,835	$690,870	$143	$913,325	$741,611	$154	623	24	189
TOTAL, PAPER AND PULP MILLS										
Totals	99	12,564	$1,780,230	$142	$2,965,315	$2,521,191	$201	2420	15	236

TABLE 6
SUMMARY
ESTIMATED TOTALS FOR ALL MILLS

Class	Daily tonnage capacity: Total	Mills reporting: Total	Mills reporting: %	Efficient tonnage equiv.: Total	Efficient tonnage equiv.: %	Net annual: Saving	Net annual: Loss
PAPER MILLS							
Book	5,070	2,796	55	2,540	50	$1,244,600	$1,239,700
Wrapping	4,930	1,732	35	2,442	50	478,632	507,248
Paperboard	8,450	5,334	63	3,922	46	219,632	253,568
News	4,790	2,519	53	2,786	58	448,546	322,644
Writing	1,605	844	53	833	52	548,947	507,758
Unclassified	3,425	1,656	48	1,810	53	530,330	473,195
Strawboard	3,700	Insufficient data to make computations.					*1,110,000
Tissue	1,027	365	36	394	38	271,860	436,770
Totals	32,997	15,246	46	14,727	45	$3,742,547	$4,850,883
PULP MILLS							
Sulphite	6,556	2,820	43	3,218	49	$843,116	$874,556
Gr. wood	7,620	3,451	45	4,044	53	380,136	335,204
Sulphate	2,050	670	33	826	40	92,512	137,088
Soda	1,530	1,154	75	788	51	203,304	191,436
Totals	17,756	8,095	46	8,876	49	$1,519,068	$1,538,284
TOTAL, PAPER AND PULP MILLS							
Totals	50,753	23,341	46	23,606	46	$5,261,615	$6,389,167

* Computations based upon new process.

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The satisfactory results derived from the use of WOLMANIZED LUMBER for roof planks very quickly eliminates all thought of the original cost.

WOLMANIZED LUMBER will last three or four times longer than ordinary untreated lumber. It will render years of service under the most trying conditions, without a replacement.

Write for booklets treating with the subject of rot and decay in lumber.

AMERICAN WOLMANIZED LUMBER CO.

ELIZABETH, N. J.

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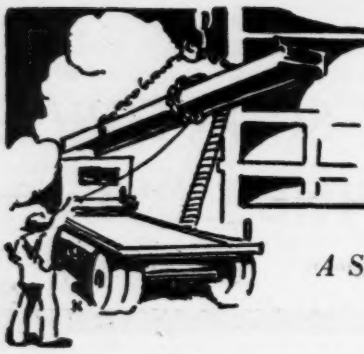


CONSTRUCTION NEWS

A Summary of Vital Facts Regarding Construction, Finances and Operation of Paper Mills

Construction News

Chicago, Ill.—The National Paper Company, 832-4 West Austin avenue, is completing plans for construction of a new three-story addition at Green and Austin avenues, designed primarily for storage and distributing service. It is estimated to cost about $45,000 The company, it is understood, is planning for immediate call for bids on general contract. J. Buerger, 5515 West Division street, is architect.

Philadelphia, Pa.—The American Fibre-Velope Manufacturing Company, 229 North 63rd street, manufacturer of envelopes and other containers, has plans for a new addition to its plant for increased output, to be one-story, estimated to cost about $25,000, with equipment. General contract has been let to A. J. Weiss, 5143 Chancellor street, Philadelphia, and work will be placed under way at once.

Chicago, Ill.—The Chicago Printed String Company, 2411 Clybourn avenue, manufacturer of fiber and kindred tapes, has taken bids on general contract for its proposed new plant at Logan Boulevard and Elston street, to be two-story and basement, 85 x 125 feet, reported to cost close to $100,000, with equipment. New unit will provide for large advance in present output. A. S. Alschuler, 28 East Jackson Boulevard, Chicago, is architect.

Oklahoma City, Okla.—The Southwest Scrap Paper Company is said to have plans under way for rebuilding of its warehouse and distributing plant, recently destroyed by fire with loss reported at close to $50,000, including mechanical equipment.

New York, N. Y.—The American Seal-Kap Corporation, recently organized by Franklin P. Ferguson, 100 East 42nd street, attorney; and J. R. Shoemaker, 821 Kensington avenue, Plainfield, N. J., and associates, is said to be planning early operation of plant in this vicinity for the manufacture of special paper products. The new company will be represented by Mr. Ferguson, address noted.

Kingsport, Tenn.—The Mead Fibre Company has awarded a general building contract to Pyle Brothers, Kingsport, for a new one-story addition to its mill, reported to cost in excess of $50,000, with equipment. Unit will be used primarily for expansion in finishing division.

Denver, Colo.—The Rocky Mountain Bank Note Company, 1834 Stout street, manufacturer of commercial paper products, has acquired property on the Speer Boulevard as site for new plant for which plans will be prepared in near future. It is proposed to begin work early in the coming year. Factory is estimated to cost about $100,000.

Milford, N. J.—The Warren Manufacturing Company, 342 Madison avenue, New York, manufacturer of glassine, greaseproof and kindred processed papers, is continuing an expansion and improvement program at its local mill, and has recently awarded contract for a turbine power unit and auxiliary equipment to cost approximately $40,000. Early installation is planned in conjunction with other equipment for increased output.

St. Louis, Mo.—The Waxide Paper Company, Berkowitz avenue, Twentieth and Tracy streets, Kansas City, Mo., is awarding miscellaneous contracts for plumbing, heating and other finishing work, for its proposed new plant on Newstead avenue, St. Louis, on which work is now in progress. It will be one-story and basement, 95 x 278 feet, estimated to cost about $150,000 with equipment. It is proposed to have plant ready for occupancy at earliest date. Leonard Hager, 3844 Utah place, St. Louis, is architect. M. B. Berkeley is president.

Joliet, Ill.—The Joliet Calender Company, manufacturer of commercial paper products, has awarded a general contract to Kaiser & Ducett, Rialto Theatre Building, for a new one-story and basement factory, estimated to cost about $65,000, with equipment. Work will be placed under way at an early date.

Detroit, Mich.—The Springman Paper Products Company, 1561 East Milwaukee street, has been acquired by the Detroit Gasket and Manufacturing Company, 6209 Hamilton street, and will be consolidated under the last noted name. Plans are under way for general expansion in output. The personnel of the Springman company will continue as heretofore.

Baldwinsville, Mass.—The A. L. Adams Paper Company is proceeding with superstructure for its proposed new mill addition for which contract recently was let, and purposes to have the unit ready for occupancy in near future. It will be two-story, 75 x 200 feet, reported to cost close to $50,000, with equipment.

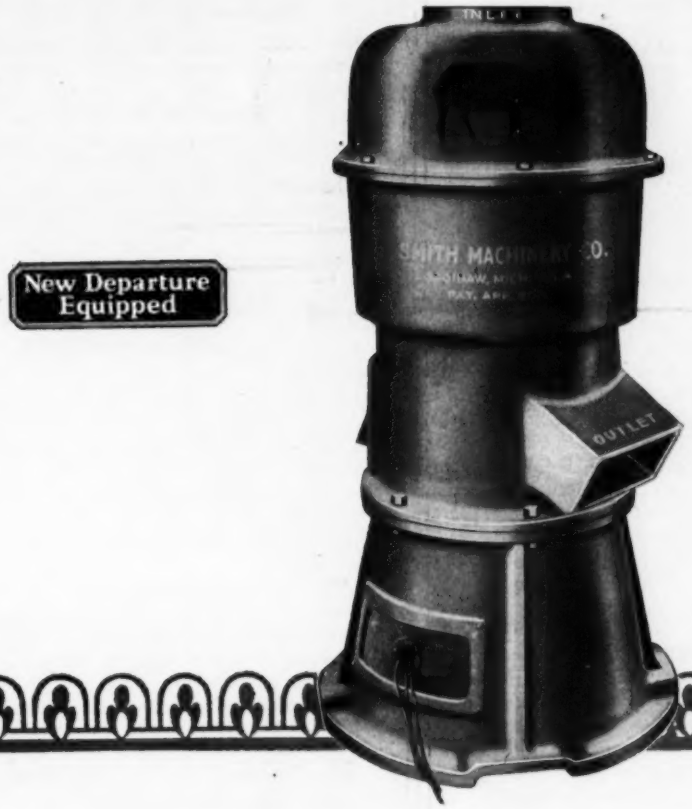
Olean, N. Y.—Following recent merger of the Acme Glass Company, Olean, and the Eastern Glass Company, New York, with concentration of operations at Olean, plans are being arranged by first noted company for a new department for the manufacture of corrugated board shipping cases and containers, and complete facilities will be provided for all company requirements in this line, heretofore secured from outside sources. Samuel Kostin is president.

Tuscaloosa, Ala.—The Gulf States Paper Corporation has recently disposed of a bond issue of $2,500,000, the fund to be used in connection with a proposed new mill in this vicinity for the manufacture of kraft paper stocks. Entire project is estimated to cost close to $5,000,000. Work will proceed on initial buildings, including pulp and paper manufacturing divisions.

St. Louis, Mo.—The Waite Paper Company, Newstead and Hunt avenues, has work in progress on a new plant unit to cost more than $75,000, and it is understood that structure is scheduled for completion at an early date. A list of equipment to be installed has been arranged.

New York, N. Y.—The International Paper Company, 100 East 42nd street, is perfecting plans for the construction of a new newsprint mill at Paugan Falls, Que., for which it is understood that bids will be asked at early date. Project will be carried out by the Canadian International Paper Company, an affiliated organization, and is estimated to cost more than $5,000,000. The International company is said to be arranging final details for its proposed new kraft paper mill on Chickasaw Creek, near Mobile, Ala., where large tract of land recently was secured. This project is estimated to cost more than $4,000,000, with machinery. J. H. Allen, Cawthon Hotel, Mobile, is engineer, in charge.

Montreal, Que.—The Standard Paper Box Company is push-



Longer Life, Lower Upkeep

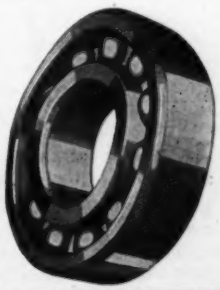
THIS wood "hogging" machine uses New Departure Ball Bearings on the vertical spindle because of their ample radial and thrust capacity and longer life. They never require readjustments, seldom need lubrication, and are sealed against moisture of the pulp grinding chamber.

New Departures are the most dependable, accurate and economical anti-friction bearings for paper-making machinery of all kinds. They add years of useful life to such machines and reduce maintenance expense to the lowest point.

Engineering bulletins setting forth the advantages of modern ball bearing installations sent on request.

The New Departure Manufacturing Company, Bristol, Connecticut; Chicago, Detroit and San Francisco.

Whenever you have a bearing problem our expert engineers will be glad to discuss it with you personally. We will help you to do your thinking.



New Departure Quality Ball Bearings

964

ing construction on a new addition to its plant to cost about $80,000, with equipment, and proposes to have the unit ready for service at early date. It will provide for considerable increase in present output. Baulne & Leonard, Montreal, are engineers.

New Companies, Financial, Etc.

New York, N. Y.—The Jefferson Paper Company has been incorporated with nominal capital of $3,000, to manufacture and deal in paper products. The company is represented by J. B. Barshay, 2 Lafayette street, New York, attorney.

Chicago, Ill.—The Ideal Wrapping Products Company, 3749 Montrose avenue, has been incorporated with capital of $20,000, to manufacture and deal in wrapping and other papers and paper products. The incorporators are Louis Marcus, and M. and Isadore Protus. The company is represented by Malkin & Malkin, Roanoke Building, Chicago.

Chicago, Ill.—Watt & Gillogly, Inc., 7 South Dearborn street, has been incorporated with capital of $145,000, to manufacture and deal in commercial products, loose leaf devices, etc. Incorporators are Frank Watt and Harry I. Gillogly.

Providence, R. I.—The Rhode Island Paper Box and Display Company, 282 Plainfield street, has filed notice of organization to manufacture paper boxes and containers, cardboard products, etc. George Carnolo, Simmonsville avenue, Johnson, R. I., is head.

Rochester, N. Y.—The George J. Gillies Corporation, manufacturer of paper boxes and containers, has filed notice of change of name to the Alderman Paper Box Corporation.

Los Angeles, Cal.—The Coast Paper Salvage Company, Inc., has been incorporated with capital of $25,000, to deal in waste paper. The incorporators are M. R. Nelson and Samuel Bernstein. The company is represented by Abraham Richman, Pacific National Bank Building, Los Angeles.

Milwaukee, Wis.—The Paper Process Company has been organized to manufacture and deal in special processed papers. The company is headed by L. A. Kleis, and is represented by Poss, Toelle & Schuler, Empire Building, Milwaukee, attorneys.

Investigate News Print Rates

[FROM OUR REGULAR CORRESPONDENT]

ALBANY, N. Y., September 17, 1928.—Representatives of a number of paper mills in Northern New York, including the International Paper Company, St. Regis Paper Company, and others, were in Washington this week attending the first conferences of the general investigation of news print rates which has been ordered by the Interstate Commerce Commission. Joseph A. Quinlan, traffic manager of the St. Regis Paper Company and affiliated companies, headed the Northern New York delegation.

Tuesday afternoon representatives of the paper manufacturing interests held a conference and discussed the possible procedure. Wednesday the first of the conferences ordered by the commission was held at which international complications were disposed of. Another conference was held Thursday. Representatives were present from the paper manufacturers, the railroads, the American Newspaper Publishers' Association, and the New York State Public Service Commission.

Finnish Pulp Sold Ahead

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., September 19, 1928.—The Finnish pulp and paper market continues generally to exhibit the slackness characteristic of this season of the year, according to reports to the Department of Commerce.

The Finnish Cellulose Union reports this year's production of sulphite and sulphate sold and orders already placed for the bulk of next year's output of sulphate pulp. The volume of transactions in mechanical ground wood has been rather insignificant. This year's production has been practically disposed of, but purchasers show some reluctance to place orders for 1929 delivery at the present prices, which are approximately $28 per metric ton f.o.b., southern Finnish port.

Flintkote Co. To Be Sold

The Flintkote Manufacturing Company, which makes and sells asphalt shingles and prepared roofings, and sells copper and copper-clad shingles, is sending the following notice to preferred shareholders in connection with the calling for redemption on October 15 of the $2,500,000 7 per cent cumulative convertible preferred stock:

"Directors have decided that the best interests of company call for the redemption of the convertible preferred stock, on October 15.

"The right of conversion into common stock may be exercised at any time up to October 15, 1928. In deciding whether to exercise this right directors feel that you should have the following information:

"Negotiations have been concluded with the Anglo-Saxon Petroleum Company, Ltd. (one of the group of companies known as the 'Royal Dutch-Shell' group), by which, subject to the approval of its counsel and of Flintkote's stockholders, that company undertakes, after the redemption or conversion of all the convertible preferred stock has been effected, that it and one or more members of such group will purchase from the company, at approximately book value per share, additional shares which will constitute a majority interest in the common stock of your company.

"The association so to be formed, your directors consider to be of great value to your company. It tends to make available for development and expansion of your company's business the resources of the Royal Dutch-Shell group, which extend over the world. Such resources comprise capital, sources of supply for asphalt and other essential materials, patents and processes believed to be valuable, a research and selling organizations, and opportunities for further development of your business on a large scale."

On December 31, 1927, there were 143,333 shares of common stock outstanding. Should the preferred stock be converted into common at the rate of 1 1-3 shares of common for each preferred share there would be an additional 33,333 shares of common outstanding. Assuming this occurs, it would mean that the Royal Dutch-Shell interests would buy in the vicinity of 175,000 shares of Flntkote common stock. The price at which this stock is to be purchased will be the adjusted book value, after the redemption of the preferred stock. On December 31, 1927, book value of Flintkote Manufacturing Company common stock was in the vicinity of $40 a share, without including good will, patents, etc.

Norwegian Chemical Pulp Again Normal

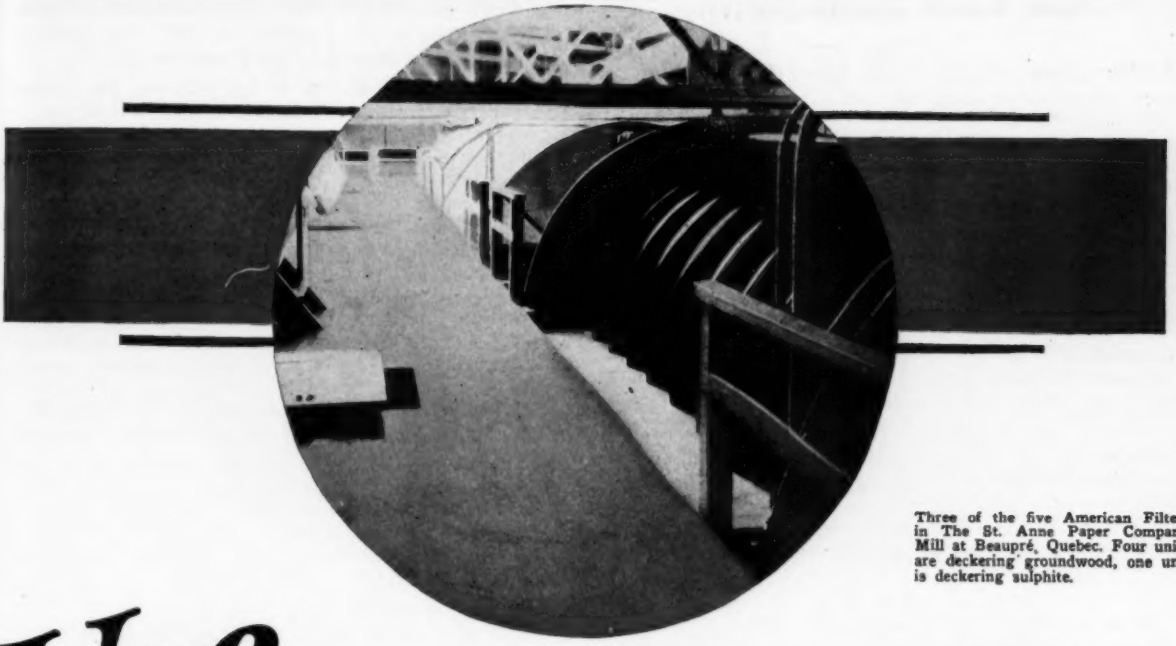
[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., September 19, 1928.—Norway's chemical pulp market, which was affected to a considerable extent by the strike in the Swedish mills, has returned to its former position, states the American Consul at Oslo in a report made public by the Department of Commerce.

Prices quoted on unbleached sulphite, which improved greatly during the strike, are at approximately the level prevailing before the trouble. Norwegian authorities consider this as indicating an over-production in this particular class of pulp, pointing to the increased output in Sweden, Finland, and Canada in substantiation of their view.

On the other hand, the market for bleached sulphite has been maintained fairly well and prices are said to be satisfactory. The same may be said for unbleached sulphate, or kraft, pulp.

If the critical situation in connection with certain bank conditions and the exchange fluctuation is taken into consideration, the chemical pulp industry has kept up surprisingly well, it is declared. The stabilization of the currency has also been said a serious strain, with wages in Norway at present higher than in other countries.



Three of the five American Filters in The St. Anne Paper Company Mill at Beaupré, Quebec. Four units are deckering groundwood, one unit is deckering sulphite.

Use Filters

...they provide not only lower operating costs but improved operations all along the line

American Disc Type and Oliver Drum Type Filters are widely used as

Groundwood Deckers
Sulphite Deckers
Pulp Deckers
Kraft Washers
Bleach Washers
Save-alls
Lime Mud Washers
Board Machines

UNQUESTIONABLY filtration is one of the most advantageous steps taken in recent years by pulp and paper makers.

Operating costs are lower because of more efficient deckering, washing, and fiber recovery. Costs are lower because maintenance is lower. They are lower because labor charges are less.

Operating conditions are improved because filters permit a closer control of stock consistencies. Filters permit more flexible operations, such as bleeding the mill of surplus water *without fiber loss* during the warm months. Filters help to make a better sheet by retaining in the stock the finer fibers.

Extensive operations of filters installed by Oliver United have provided a fund of data. All of it points to the undeniable fact that filters have proven their worth to paper and pulp mills.

OLIVER UNITED FILTERS INC.

Successor to Oliver Continuous Filter Co. and United Filters Corporation

FACTORIES—OAKLAND, CAL.—HAZLETON, PA.

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New York Trade Jottings

Odgen Minton, inventor of the Minton Vacuum Dryer, was a New York visitor early this week.

* * *

Importers' complaints of delays in carting cases from the Piers to the Appraisers Stores for customs examination, is being investigated by the New York Collector's office.

* * *

Sustaining protests of the Continental Paper and Bag Company and others, the Customs Court finds that wool felt endless blankets are dutiable at 30 per cent ad valorem.

* * *

The governing committee of the New York Stock Exchange has admitted to the list for trading purposes, $6,000,000 fifteen year gold debentures of the Container Corporation of America, due June 1, 1943.

* * *

During the last four and a half months Yoshikuni Seki, of the Mitsubishi Paper Mills, Ltd., of Tokyo, Japan, has inspected 77 representative paper mills in the United States and Canada. He is scheduled to sail for England early in October and before returning to Japan plans to inspect leading paper mills throughout Europe.

* * *

At the regular weekly meeting and luncheon of the New York Division of the Salesmen's Association of the Paper Industry, held last monday at the Canadian Club, there was a free for all discussion on "Selecting the Right Paper for the Right Job—How Can Merchant and Mill Salesmen Best Cooperate to Achieve This Result." Several well known general paper merchants took part in the proceedings.

* * *

In connection with the application for the listing of its preferred and common stock on the New York Stock Exchange, the Grasselli Chemical Company has published the result of its operations for the six months ended June 30, which shows a net income after all charges. Including Federal taxes, of $2,431,843, compared with net income of $2,253,453 for the entire year ended December 31, 1927. After preferred dividend requirements the six months' earnings are equivalent to $2.70 a share on the common stock outstanding, including 100,000 shares of common stock sold by the company subsequent to June 30.

New Bag Factory For St. Helens

[FROM OUR REGULAR CORRESPONDENT]

PORTLAND, Ore., September 14, 1928.—Max Oberdorfer, general manager of the St. Helens Pulp and Paper Company, St. Helens, Ore., announced on September 7 that the California Bag and Paper Company of Emeryville, Cal., will dismantle the plant at that place and remove the business to St. Helens. The change will be made within 90 days, thus bringing to St. Helens an additional payroll of not less than $150,000.

Construction of a new plant will begin at once adjacent to the St. Helens Pulp and Paper Company. It is understood that the Hawley interests of this latter company were also financially interested in the California plant. Machinery is to be shipped to Oregon as soon as the new building can be rushed to completion.

The new plant will make paper bags of all sizes for the retail grocery trade, and will have a capacity of 3,000,000 bags in eight hours. Mr. Oberdorfer stated that about 100 persons would be employed.

Since the California plant has been receiving paper from the Hawley Paper Mills plants at St. Helens and Oregon City for the manufacture of the bags, it has been deemed advisable from the point of freight costs, to bring the manufacturing plant closer to the source of raw materials thereby eliminating much expenditures for freight.

Crown Zellerbach Pays First Common Dividend

SAN FRANCISCO, Cal., September 14, 1928.—The Crown Zellerbach Corporation declared an initial quarterly dividend of 25 cents on common. A dividend of 83 1/3 cents was also declared on the preferred for July and August. Both dividends are payable October 15 to stock of record September 29.

Offers were made to accept Crown Willamette free stock or voting trust certificates in exchange for new common, for 60 days from September 17, and to accept Zellerbach free stock and voting trust certificates for exchange indefinitely. These offers were designed to exchange non-tradable securities for marketable stocks.

Statement of Crown Zellerbach Corporation and subsidiaries as of July 31, 1928, after giving effect to issuance of stocks provided for under the reorganization plan, shows total assets of $105,219,996, current assets $21,651,906 and current liabilities of $8,747,263. Capital stock and surplus represented by stocks in hands of the public or to be issued amounted to $70,275,446.

Consolidated balance sheet of Crown Zellerbach Corporation and subsidiaries as of July 31, 1928 (after giving effect to issuance of stocks provided for under reorganization plan and making provision for common shares still to be exchanged for Crown Willamette Paper Company's common stock outstanding) follows:

Assets: Lands, timberlands, leases, etc., less depreciation and amortization, $33,713,728; buildings, machinery and equipment, less depreciation, $39,946,607; cash, $1,776,582; government bonds, $1,014,993; notes and accounts receivable, $6,958,016; inventory, $11,902,316; other accounts receivable, $270,831; investments, $8,194,062; deferred charges, $1,442,861; total, $105,219,996.

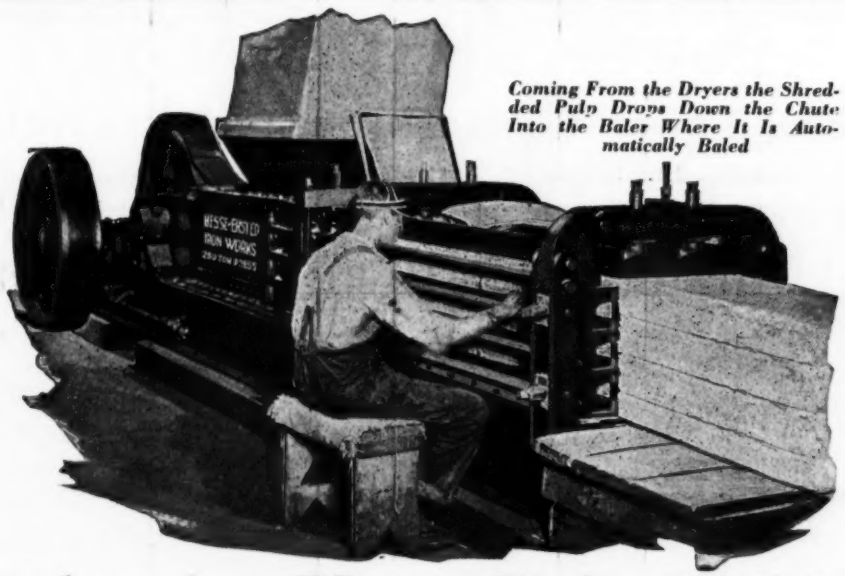
Liabilities: Stated capital and initial surplus (represented by following stocks in hands of the public or to be issued, 200,000 no-par shares of $7 first preferred and 41,000 no-par shares of $6 second preferred stock of Crown Willamette Paper Company, 6,486 shares, par $100, 6 per cent preferred stock, and 5,777 shares, par $100, ordinary stock of Pacific Mills, Ltd., 138 shares of 6 per cent preferred stock of Northwestern Power and Light Company, and 10,740 no-par shares of convertible preferred, 193,955 no-par shares of $5 preferred and 1,969,774 no-par shares of common stock of Crown Zellerbach Corporation, $61,337,849; funded debt, $23,981,650; mortgage and contracts payable, $142,825; notes payable, $4,833,000; accounts payable, $3,052,621; federal taxes, $861,643; deferred notes payable, $1,020,000; special reserve, $1,052,811; earned surplus (including $5,780,679 of Crown Willamette Paper Company and its subsidiaries), $8,937,597; total, $105,219,996.

News Print Production for August

Production of news print in Canada during August, 1928, amounted to 200,656 tons and shipments to 196,894 tons, according to the News Print Service Bureau. Production in the United States was 115,940 tons and shipments 114,539 tons, making a total United States and Canadian news print production of 316,596 tons and shipments of 311,433 tons. During August, 20,930 tons of news print were made in Newfoundland and 1,671 tons in Mexico, so that the total North American production for the month amounted to 339,197 tons.

The Canadian mills produced 206,109 tons more in the first eight months of 1928 than in 1927, which was an increase of 15 per cent. The United States output was 76,436 tons, or 7 per cent less than for the first eight months of 1927. Production in Newfoundland was 18,406 tons, or 14 per cent more, and in Mexico 1,082 tons more, making a total North American increase of 149,161 tons, or 6 per cent over the first eight months period of the year, one year ago.

During August the Canadian mills operated at 78.0 per cent of rated capacity and the United States mills at 77.4 per cent. Stocks of news print paper at Canadian mills totaled 52,108 tons at the end of August and at United States mills 40,838 tons, making a combined total of 92,946 tons, which was equivalent to 6.2 days' average production.



Coming From the Dryers the Shredded Pulp Drops Down the Chute Into the Baler Where It Is Automatically Baled

Modernize Your Pulp Making

With the FIDALGO SYSTEM of SHREDDING and DRYING

After four years of operation and development we are now ready to offer the manufacturers of pulp an entirely new and superior method of drying and shipping pulp for domestic rail and water shipment or for export.

The FIDALGO SYSTEM, the name of this new method has been carefully developed in our own plants which are now producing 150 tons per day. Pulp produced by this system has met with distinct favor among paper mills using it.

To the buyer of pulp the FIDALGO SYSTEM offers—

1. FIDALGO produced pulp being in small pieces and with a rough fibrous surface hydrates more quickly than sheet pulp, thus saving a large amount of time in the beaters.
2. FIDALGO produced pulp does not lose strength in drying as does pulp made on cylinder machines. It retains approximately the same strength as the wet sheet.

To the manufacturer of pulp the FIDALGO SYSTEM offers—

1. A saving of 1/3 in original cost of equipment and installation.
2. A daily saving in operating costs through a large decrease in steam consumption.
3. A simple and efficient system of baling the finished pulp for shipment. The bale weighs 250 pounds and contains 50 cubic feet per ton.

These advantages and others have through practical demonstration induced five large new pulp mills to adopt the FIDALGO SYSTEM of making pulp.

The process worked out in every detail is available to you together with our experience and advice in purchasing complete equipment for converting the slush pulp into dry pulp for market. This includes a license to operate under our complete process patents.

THE CLAIM REGISTRATION OF OUR TRADE NAME BY OTHER PARTIES IS NOT ACCORDING TO OUR FACTS. ANY ATTEMPT TO USE OUR SYSTEM WITHOUT PROPER AUTHORITY WILL BE RIGIDLY OPPOSED. OUR PATENTS ARE A PUBLIC RECORD. WE HAVE NOT AS YET APPOINTED ANY SALES AGENTS AND WILL IGNORE ANY PUBLIC DISCUSSION WITH PARTIES ATTEMPTING TO INFRINGE.

For Detailed Information Write

The FIDALGO PULP MANUFACTURING CO. Inc.

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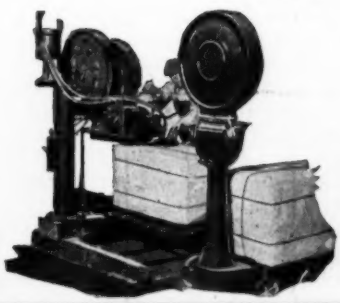
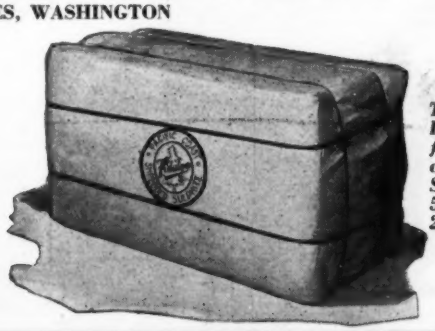




The Finished Bale Ready for Rail or Water Shipment 50 Cubic Feet 250 Pounds

Power Plant Section

Reducing Power Costs Through Unit Treatment

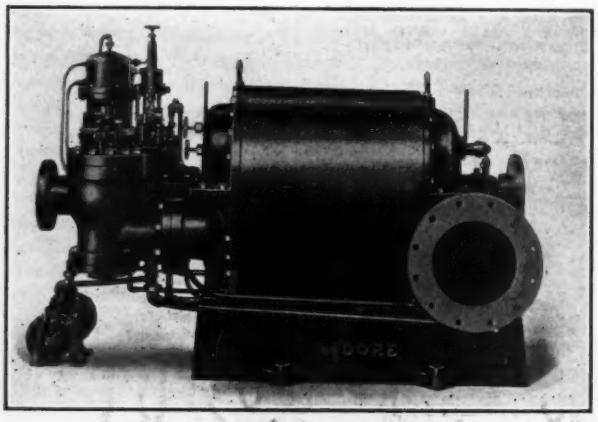
Conducted by REGINALD TRAUTSCHOLD, Consulting Engineer

Modernizing the Mill and Power Plant

Steam Turbine Installations

"In our estimation, the use of steam turbines in paper mills is rapidly on the increase." This, from one of the leading manufacturers of steam turbines, is very significant, particularly when confirmed in no uncertain manner by quite formidable lists of turbine installations made during recent months, by this and other power equipment manufacturers, for driving pumps, fans, pulverizers, generators and paper machines. It is evidence such as this which best records and present trends in modernizing the mill and paper mill power plant, so far as prime movers and important power units are concerned. It shows, furthermore, that the question of steam turbine installations is a very live and important one to all pulp and paper mills and one which commands consideration at all times by the operating personnel.

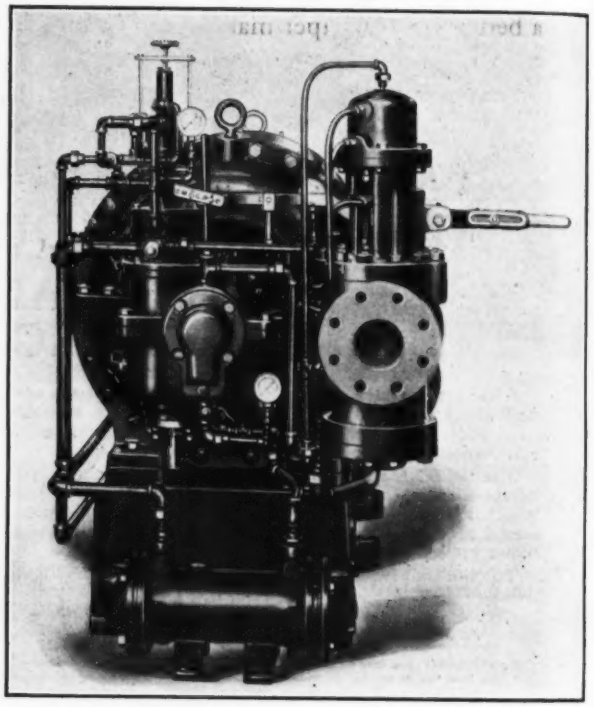
In the March 22, 1928, issue, these columns were devoted to a brief exposition of proper and eminently suitable fields for the various varieties of steam turbines; condensing, non-condensing, bleeder and mixed pressure turbines and various combinations of these varieties; all of which types are today employed with outstanding efficiency and economy in paper mill service. The particular installations featured were typical, though, as was pointed out, each turbine installation represents a specific problem governed by local conditions and requirements. Consequently, since no rule of thumb determination is applicable to steam turbine installations, if the best results are to be secured, the only feasible way for the pulp and paper making industries to keep posted on progress made in reducing power costs directly and production costs indirectly, through applications of approved steam turbine drives, is to give heed to all available information concerning new installations which are productive of real achievements in effecting savings.



Courtesy: Moore Steam Turbine Corp.

FIG. 1

333-horsepower multistage (9) steam turbine which effects a 27.2 per cent saving in steam



Courtesy: Moore Steam Turbine Corp.

FIG. 2

Governor arrangement of 9-stage replacement steam turbine.

Turbine Investment Yielding 220 Per Cent

Such a paper machine drive has been installed during the current year in one of the large mills in northern New York where, evidently, the expenditure of each dollar is counted upon to bring in a handsome return. It is very much a case of "when Greek meets Greek", for the paper machine in question was already being run quite effectively and efficiently by a first class single stage steam turbine, a 333-horsepower unit operating on 150 pound steam carrying 80 degrees of superheat. This turbine operated between a range of 300 and 360 horsepower at speeds of from 2,690 to 3,250 r.p.m. At the low output condition, the back pressure customarily carried was about 3 pounds and at the high speed, 15 pounds.

Here was a modern power unit, mechanically efficient and so far as the type was concerned well adapted to the service required, i.e., the drive of a large paper machine. It was felt, however, that the resulting exhaust steam was somewhat excessive, since it could not all be used in the driers or for other useful purpose, and was consequently wasted.

When Lincoln came to . . Cincinnati

JUST about the time that Asa Shuler and J. W. Benninghofen formed a partnership for the manufacture of a better kind of paper making felt, Abraham Lincoln came to Cincinnati to give a talk.

No doubt the two young men up in Hamilton, Ohio, would have liked to come down to hear him. But twenty miles in those days was a long way. It meant sacrificing almost two days to their rapidly growing business, which was still too young to afford this inattention.

The descendants of these two men are making still better felts. For they have in back of them all this accumulated experience gained in more than 70 years of felt manufacturing. They have learned what to do as well as what not to do.

And the result is a felt that takes out water in more than unusual quantities;

that wears long with less down time for washing; that helps to produce a better finished piece of paper—in a word, a felt that saves money and makes money for you.

Try a Hamilton Felt on your hardest machine. Give it every test of inspection and service you think a felt ought to have. You will want to use Hamilton Felts on all your machines.

Ask the Hamilton Felt man the next time he calls, or write us direct—he is a practical paper maker as well as a felt expert.

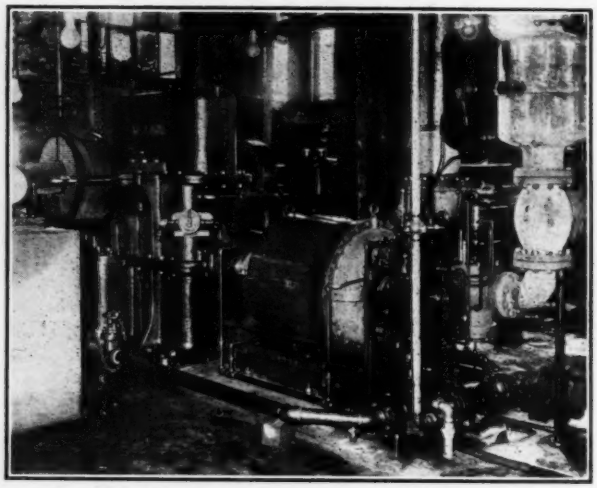
Hamilton Felts are marked by two blue lines full width of the felt and by one shorter blue line midway between them.

Shuler and Benninghofen
Hamilton, Ohio
The Miami Woolen Mills
Established 1858

Hamilton Felts

Though the wastage of steam in a paper mill is not at all unusual, there are probably very few mills which would seriously consider replacing a highly efficient power unit; simple to operate, low in maintenance expenses, subject to close regulation and furnishing clean exhaust steam; by another type of steam unit drive just for the reason that only the major proportion of the exhaust steam, 75 per cent, or so, could be profitably utilized. Yet this is exactly what was done at this plant and with highly satisfactory results.

A non-condensing unit being deemed necessary, since considerable exhaust steam was essential for the driers, the logical replacement unit was an approved type of multistage turbine, making somewhat more effective conversion of the steam utilized than was possible with the single stage unit. The unit decided upon, it was



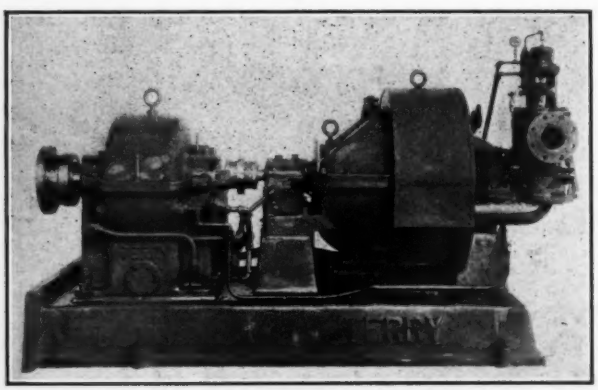
Courtesy: Moore Steam Turbine Corp.

FIG. 3

General view of turbine installation yielding return of 220 per cent.

also essential that it be installed with the minimum interruption to the productive activity of the mill, else lost output would have the effect of offsetting at least some of the anticipated savings attributable to more economical steam consumption.

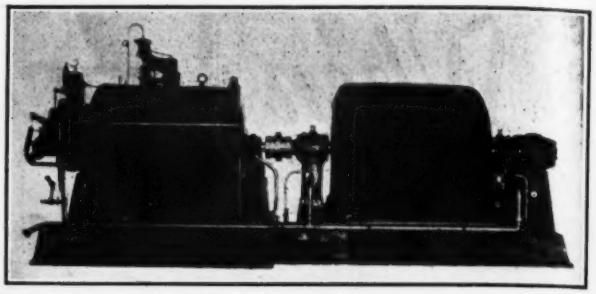
Actually, the multistage (nine stage) turbine was installed without any interference with the working schedule of the mill, alterations being commenced at 10:30 one Sunday morning and the paper machine with the new turbine drive functioning was ready for service at 4:00 A. M. Monday, seventeen and a half hours



Courtesy: Terry Steam Turbine Co.

FIG. 4

Turbine and gear of 500-kilowatt non-condensing turbo-generator serving large Canadian news print mill.



Courtesy: Terry Steam Turbine Co.

FIG. 5

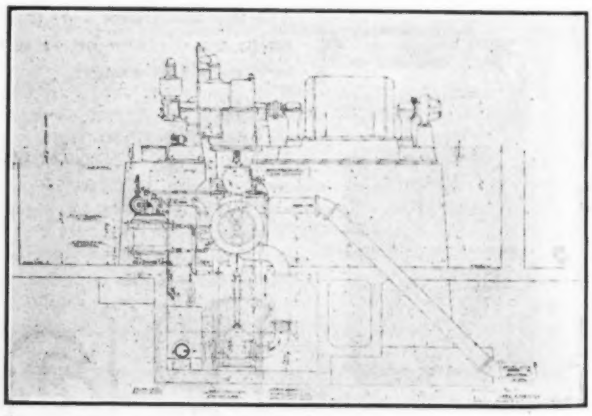
750-kilowatt condensing turbo-alternator at the Michigan Paper Co. of Plainwell.

later. The turbine was mounted on the baseplate previously used for the single stage turbine, only a few changes being necessary, and the original speed reducer, reduction gear was retained.

The investment entailed, to cover the cost of the new turbine and all expenses connected with its installation, was a matter of about $3.000.00, and was returned in savings effected in less than five and a half months. During the first day (24-hour operation), the multistage turbine consumed an average of 9,410 pounds of steam per hour, whereas the single stage unit under identical service conditions used 12,920 pounds of steam an hour. This saving of 27.2 per cent. in steam consumption has been pretty well maintained, furthermore, and represents conservation in coal during the year valued at approximately $6,700.00, which means an annual return on the investment of at least 220 per cent., or, in other words, a reduction in the cost of paper production of about 50 cents a ton.

Incidentally, the new turbine is furnished with a hydraulic variable speed governor of the oil relay type which permits the speed of the turbine, also of the paper machine, to be varied over a range of as high as 10 to 1 if necessary. To change the speed of the paper machine while it is in operation, it is only necessary to manipulate a hand wheel. At any setting, the speed of the machine is held practically constant, minimizing the breaking of paper and permitting the machine to be driven with safety at the high speeds essential to secure the maximum feasible output.

This noteworthy installation was the direct outcome of dissatisfaction on the part of the operating engineer, not with the existing power equipment, but rather with his inability to maintain a sensitive heat balance in his plant. While exactly the same situation



Courtesy: Terry Steam Turbine Co.

FIG. 6

Arrangement of power unit, condenser and auxiliaries at the Michigan Paper Co. of Plainwell.

Your FELT PROBLEMS and This Trademark

There is a definite connection between the solution of your felt problems and the Appleton trademark. It represents the successful experience of 37 years making felts and jackets for paper mills. It represents a product, made only of a high grade pure wool, whose every detail of operation is checked and rechecked during manufacture. It represents felts and jackets that today are standard among paper mills for their service and quality.

Submit your felt problems to us. We'll gladly give you the result of our 37 years experience solving felt problems for others.

APPLETON WOOLEN MILLS

Appleton, Wisconsin

Appleton

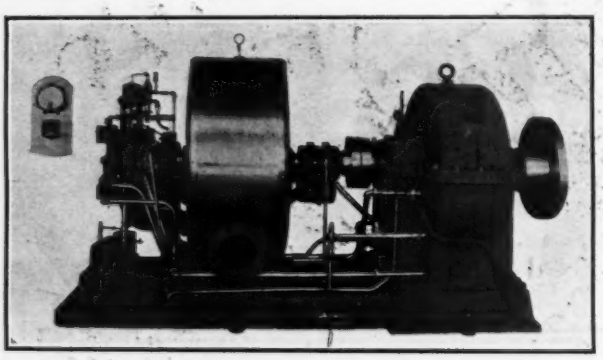
Felts and Jackets

is probably not to be encountered in any other plant, this experience well shows that it behooves every paper mill engineer, not only to strive to reduce his conversion costs to the utmost, but to keep an eagle eye upon his heat balances. A change in even the best of equipments may sometimes be advisable and justified.

Bettering Central Station Records

Another of the more interesting of recent steam turbine installations, or rather an installation in the course of being completed, since the latest order for turbines has yet to be filled, is in connection with one of the large Canadian newsprint mills. This mill already has six 500-kilowatt geared turbo-generators in service in connection with electric drives for paper machines and has three more such units on order. They are of the non-condensing type, operating on 125 pound initial steam pressure and exhausting against 20 pound back pressure.

These special units are particularly interesting, because the heat balance of the mill, by virtue of the effective utilization of the exhaust steam for drying processes, is so admirable that the actual fuel consumption of the turbines for power purposes does not exceed half a pound of fuel per kilowatt-hour. Such record is comparable with the one pound of fuel per kilowatt-hour which is

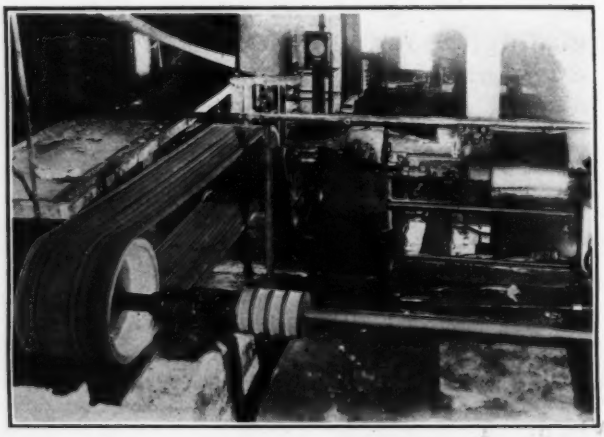


Courtesy: Terry Steam Turbine Co.

FIG. 7

250-horsepower steam turbine drive at the Camden mill of the Southern International Paper Co., showing control panel of remote, push button, speed regulator.

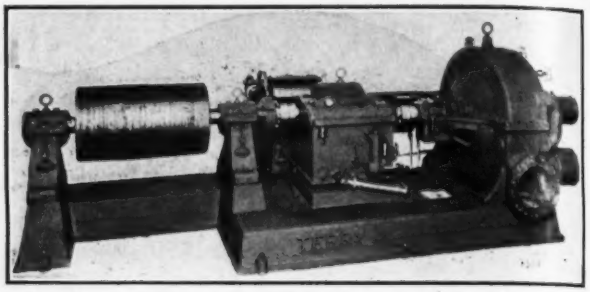
about the best that the largest and most efficient central stations in the country obtain. It is secured, moreover, in the country noted for its plentiful supply of cheap hydro-electric power and is indicative of the truly favorable position in regard to power costs which can be gained in pulp and paper mills when the heat balance



Courtesy: Terry Steam Turbine Co.

FIG. 8

"Texrope" steam turbine drive of mill in New York State.



Courtesy: Terry Steam Turbine Co.

FIG. 9

300-horsepower steam turbine belt driven unit at the Bogalusa Paper Co., Inc.

of the mill is given the attention it should command.

Still another recent steam turbine installation of note is at the plant of the Michigan Paper Company of Plainwell where a 750-kilowatt turbo-alternator arranged for bleeding various quantities of steam has been installed. This unit is designed for 150-pound initial steam pressure and is run condensingly, exhausting into 28-inch vacuum. The bleeding provisions are such that 10,000 pounds of steam an hour can be withdrawn at 6 pounds gauge pressure.

The most striking thing about this installation is that the turbine and alternating current generator, on a common bedplate, are mounted some six feet above the floor level, the condenser on the floor level and most of the auxiliary equipment on still a lower level. This arrangement is an exceedingly compact one, utilizing relatively little floor area, and still providing ample room to work around all the equipment.

Recent Developments in Paper Machine Turbine Drives

A number of the recent refinements in turbine drives for paper machines have been in the deservedly popular direction of remote speed control. Several of these useful devices have been developed and are now on the market. One such is shown in the view of one of the two turbine drives recently furnished the new Camden mill of the Southern International Paper Company. It consists essentially of a prominent speed indicator and two push button controls mounted upon a panel to be located on the machine floor

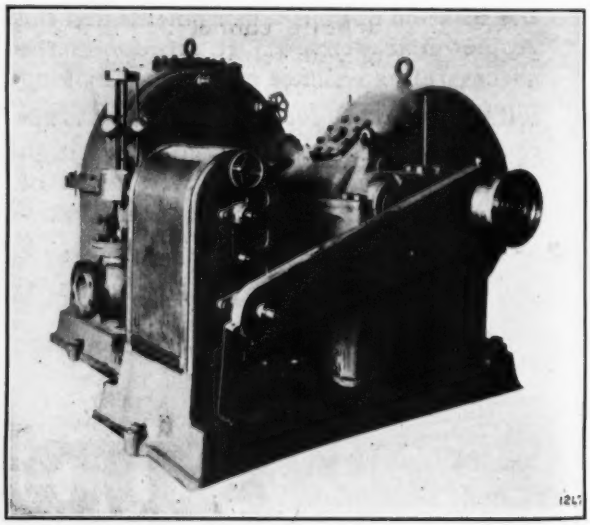


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FIG. 10

Typical arrangement of steam turbine drive with herringbone gears for direct connection.

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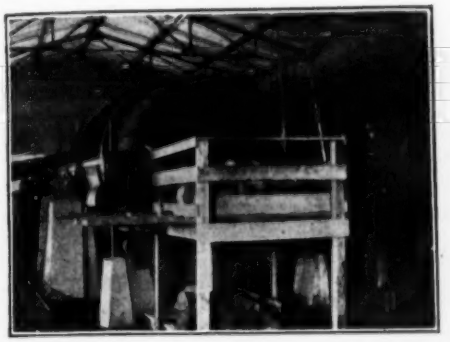

Installation of 10′ x 30′ Paulson Barking Drum—one of the installations in 23 mills.

Manitowoc Digester—one of the installations built for 104 sulphite mills.

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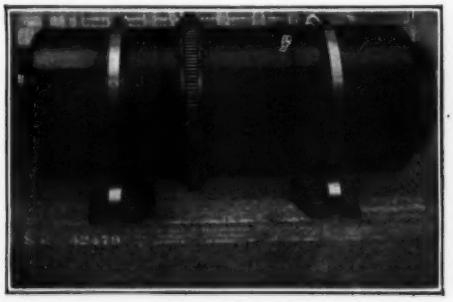

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Your inquiry on this equipment is solicited.

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Manitowoc Engineering Works

Manitowoc, Wisconsin

at any desired point. When it is desired to alter the speed of the machine, all the operator has to do is to press one of the buttons, "fast" or "slow" as the case may be. The simplicity of this control from an operating standpoint and the speed with which it functions commend it highly, naturally, to those mills which have installed it. It is one of those incidental refinements which can readily be responsible for avoidance of interruptions in output which without the aid of such sensitive and prompt acting control would be costly and very difficult to guard against, a refinement which should soon be generally looked upon in the nature of an essential.

In the matter of mechanical transmissions for utilizing the power output of the steam turbine, considerable activity is evident among manufacturers of speed reducers and variable speed transmissions, to make such devices more and more adaptable and essential to the industries, and where belt transmissions are still favored some of the special belts capable of efficient short center operation have been well received in many of the pulp and paper mills. The view, taken in a mill in northern New York, depicting the drive between a variable speed paper machine turbine drive and the line shaft, shows the use of such a belt drive, the driving band consisting of a number of endless "V" shaped belts running in individual, conforming grooves on driving and driven sheaves.

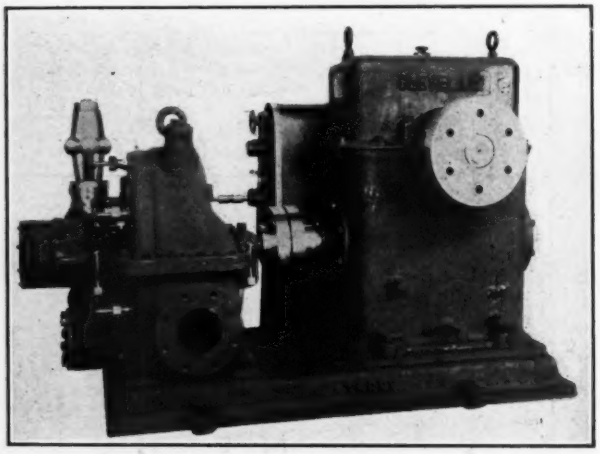
Typical Steam Turbine Units

The balance of the illustrations show typical, and quite usual, steam turbine units, featuring the method employed for transmitting the power output of the units. The first of these is one of the two 300-horsepower assemblies in service at the Bogalusa Paper Company, Inc. These turbines are designed for 135-pound initial steam pressure and 25-pound back pressure and are reputed to have replaced reciprocating engines to quite decided advantage. The next view shows a turbine unit with herringbone gears for direct connection. Then comes a compact assembly making use of a worm gear type of speed reducer and, finally, another view of a steam turbine set for a belt drive.

There is nothing particularly noteworthy regarding these latter illustrations, other than, perhaps, the distinctive compactness of the assemblages. They are presented primarily to show the versatility of the steam turbine as a power unit and how it may readily be adapted to almost any system of power transmission.

Importance in Paper Industry

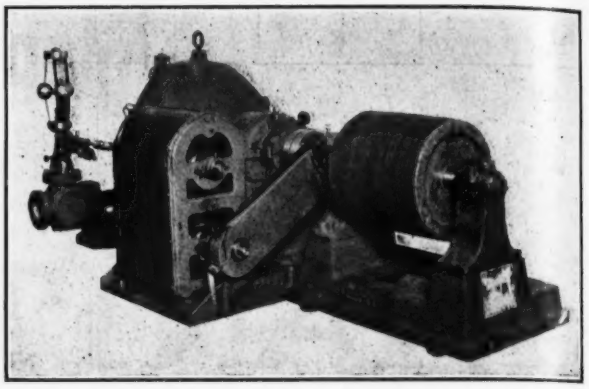
When it is appreciated that today the pulp and paper industries employ upward of 3,000,000 horsepower, between 20,000,000,000 and 30,000,000,000 horsepower-hours annually, some idea can be formed of the importance of the modern steam turbine in paper making activities. No wonder the use of steam turbines, inherently



Courtesy: Terry Steam Turbine Co.

FIG. 11

Typical arrangement of steam turbine drive with worm gear speed reducer.



Courtesy: Terry Steam Turbine Co.

FIG. 12

Typical arrangement of steam turbine drive for belt transmission.

the most efficient of all steam power units, is rapidly on the increase. Their proper use permits the attainment of those sensitive heat balances of plant which are so instrumental in realizing low production costs.

With steam turbines procurable with almost any desired characteristics, so far as utilization processes in steam consumption are concerned, every pound of steam generated in the boiler plant can be productively employed. Steam wastage can be virtually eliminated and it takes relatively little steam salvage an hour to reduce production costs by a number of cents a ton output.

Mr. Willson on Paper Standardization

HOLYOKE, Mass., September 19, 1928.—Efforts to standardize the paper requirements of business organizations as a means of eliminating waste have been highly successful and work along this line is proceeding rapidly, according to Sidney L. Willson, president of the American Writing Paper Company, Inc.

Mr. Willson began the standardization work some time ago and this year established the Paper Users' Standardization Bureau, which offered to analyze factory and office forms, and other documents used in large volume by business, in order that permanent grade papers might be selected for requirements and that inferior paper might be devoted entirely for temporary purposes.

The mass of business forms received for analysis by the Bureau has been large, reaching on some days as many as 5,000 different papers, all devoted to individual uses. More than 500 large organizations have had their paper requirements standardized. Many instances of where cheap grade paper that will deteriorate in a few years is being used for records of a permanent nature have been revealed. More frequently, however, it has been found that paper of a superior quality is being employed for temporary office memoranda that lose their significance in a few days.

The work of the Bureau was offered in the belief that the average business man is not an expert on paper and that the grade of paper for business use often is selected at random or by accident. Branch offices were established in a number of cities and these have forwarded papers to Holyoke, Mass, for analysis.

It is contended by the Bureau that the exact nature of a factory or office form cannot be determined without a chemical analysis, which reveals not only the kind of fibers used by the paper maker, but also their length and lasting qualities. The Bureau also has subjected paper to standard creasing, bursting and endurance tests.

According to Mr. Willson, in virtually all instances where a set of specifications has been prescribed for a company it has meant a financial saving and at the same time has given the company better paper for its purposes. The Bureau, he explained, is not a sales organization, and after making its analysis and leaving its specifications, it withdraws. It was established on the theory that the paper industry would benefit by giving business the best service by adapting the right type of paper to any given purpose.

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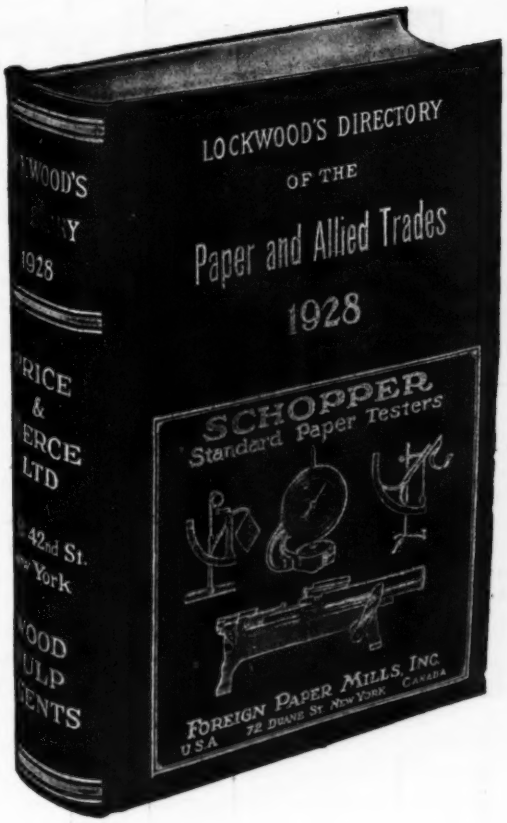

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A USEFUL ASSOCIATION

The American Paper and Pulp Association through Major O. M. Porter, its secretary-treasurer, has just issued an interesting booklet which tells in a concise manner what the association is doing and why pulp and paper manufacturing concerns should support its activities.

The purpose of the American Paper and Pulp Association is to enable the industry to act as a unit for its own protection, promotion and perpetuation with respect to major problems of general import to all branches, such as tariff, taxation, state and federal legislation, raw material supplies, general statistics and research, etc., which cannot be handled effectively or economically by individual companies or by small groups of companies acting independently.

The 1928-1929 program of the association is as follows:—

Tariff—To organize the industry for tariff protection.

Legislation—To focus the industry's attention upon legislative matters affecting the industry.

Statistics—To develop general statistical data for the entire paper industry and to prepare special statistical reports not otherwise provided for by organized activity in the various branches of the industry.

Stream Pollution—To study the problem of waste utilization and stream improvement.

Woodlands—To develop its Woodlands Section's service to managers, foresters and executives who are charged with the responsibility of providing and perpetuating the industry's wood supply.

Supply and Equipment—To co-ordinate the interests of the supply and equipment manufacturers servng the paper industry, in the knowledge that their prosperity is closely related to the industry's prosperity.

Direct Service—To give effective, direct service to member mills, government departments, educational institutions and the public, in response to their voluminous requests for information, statistical data, contacts, etc., whenever such service is in the interest of the paper industry of the United States.

Stated briefly, the Association has enabled the industry to present a substantially united front on its major common problems, thus contributing to the protection, promotion and perpetuation of the entire industry.

Among its accomplishments might be listed the following:

Obtaining adequate tariff protection both as to rates and the enforcement of the tariff laws as affected by the Import Committee of the Paper Industry.

Promoting the continuation of supplies of raw materials, including pulpwood, casein, etc.

Fostering favorable legislation in reference to forest research, protection and management studies, in cooperation with other wood-using industries.

Preventing unfavorable and discriminatory legislation in the matter of stream pollution, taxation, etc.

Facilitating commercial arbitration in service to its member companies.

Rendering general statistical service to the entire industry and preparing special reports for individual groups in the industry.

Promoting simplification and standardization in various grades of paper through cooperation with the Division of Simplified Practice of the Department of Commerce.

Establishing standards for weighing, sampling and testing of wood pulp, in cooperation with the Technical Association and the Association of American Wood Pulp Importers, which have been accepted by the industry both here and abroad.

Handling the industry's annual convention, various group meetings and conferences with the view to promoting and coordinating cooperative activity in the industry.

On September 15, a comprehensive plan of study to determine the economic possibilities of forestry as a means of pulpwood supply was placed before the paper industry by Major Oliver M. Porter and Charles W. Boyce of the American Paper and Pulp Association. The significance of this study cannot be overestimated. It is the first time that a wood using industry has undertaken an extensive study of the possibilities of forestry. It marks the beginning of a new attitude on the part of wood using industries toward the maintenance of adequate forest supplies for the use of the American public.

Today over 90 per cent of the paper manufactured in the United States is produced from wood. During the past half century, the use of wood has grown from an insignificant quantity to the present high total of over 6,000,000 cords a year, which, although a large quantity in itself, represents but 3 per cent of the total American annual wood use.

The paper industry, during the present era of wood pulp, has concentrated in the Northeast and the Lake States. Recent developments, made possible by technical improvements and economic changes, have resulted in rapid expansion of the industry in the South and the Pacific Northwest. All of these industrial groups are dependent upon the wood supply of the region for their raw material.

Regional depletion of the wood supply, brought about more by the use of wood for many other purposes than for paper alone, has required extensive alterations in technical processes to make use of other than the more common pulpwoods. At the present time, the transportation charges from the woods to the mills form a high percentage of the delivered cost of wood. The prospect of even higher percentages in the future, coupled with diminution of supply and consequent increased costs, cannot be denied.

The proposed nation-wide study of the economic factors influencing the practice of forestry will form the basis for general and company forest policies. This study involves two purposes: one the determination of the financial amounts which a company can safely invest in forestry, and, secondly, the determination of what can be expected from this investment in way of additional forest growth.

The paper industry has long been a leader in forestry. It is entirely in keeping with this progressive spirit that the paper industry should be the first of our great wood using industries to undertake a study of the possibilities in forestry.

The Association maintains effective direct contacts with educational institutions, government departments and the leading executives and associations of the pulp and paper industry at home and abroad. These contacts enable the Association to furnish its members with data and information regarding all phases of their mill problems from raw material supplies to the distribution of their finished products.

The American Paper and Pulp Association is the keystone of the industry's organization structure, enabling it to concentrate its power and influence for its own protection, promotion and perpetuation, as could not be done by any organization less representative of the entire industry, or by any group of mills acting independently. As such, the PAPER TRADE JOURNAL believes it merits the support of every pulp and paper organization, manufacturer and converter in the United States.

J. & J. Rogers Co. Gives Bonus

[FROM OUR REGULAR CORRESPONDENT]

AUSABLE FORKS, N. Y., September 17, 1928.—Employees of the mills of the J. & J. Rogers Company were given an agreeable surprise this week when a notice was included in the pay envelopes by the company announcing a ten per cent bonus for all employees of the firm based on their wage scale for the past three months. This action was taken by the company as a reward for the cooperation of the employees in keeping the mills operating at capacity throughout the summer. Usually during the summer months the Rogers Mills as well as others in the Upper Hudson Valley are forced to curtail operations owing to low water. This is the first summer in many years that the up-state mills have had sufficient water to operate in full.

In announcing the ten per cent bonus to the workers the company said: "We certainly are pleased at being able to run our plants to full capacity through the dull season this summer and we think a great deal of this is due to the excellent cooperation received from you in maintaining our quality and service. The difference in running to capacity as against a partial shutdown during the summer months is considerable and we think you are entitled to a part of this saving—therefore are very glad to present you with a bonus of ten per cent on your weekly wage scale for the last quarter (thirteen weeks). This is figured on a basis of full time at your regular rate."

To Build Container Plant at Antioch

[FROM OUR REGULAR CORRESPONDENT]

ANTIOCH, Cal., September 14, 1928.—Work will commence at an early date on the erection of a container plant here for the manufacture of cartons and cardboard boxes by the Fiberboard Products, Inc.

The plant, which will be built on the grounds of the Company's local paper mill, will cost $250,000. It will provide employment for over 150 men and women. This is part of a building program embracing the expenditure of $1,000,000 on a number of company holdings on the Pacific Coast.

Mr. Machold Leaves St. Regis Paper Co.

[FROM OUR REGULAR CORRESPONDENT]

ALBANY, N. Y., September 17, 1928.—H. Edmund Machold, vice president and a member of the board of directors of the St. Regis Paper Company, has resigned following his recent selection as chairman of the New York State Republican Committee. Mr. Machold for years has been prominently identified with industrial development in Northern New York, being a member of the firm of F. L. Carlisle & Co., owners of a chain of paper mills and power companies. He served as a director of practically all of the Carlisle companies and was president of the Northeastern Power Corporation, one of the largest of the Northern New York power concerns.

He has resigned his position also as well as leaving the directorates of the various Carlisle subsidiaries with which he was connected in order that he can give his entire time to his duties as Republican State Chairman. He has been succeeded as president of the Northeastern Power Corporation by F. L. Carlisle, chairman of the board, but his successor as vice president of the St. Regis Paper Company has not yet been announced.

Mr. Machold, for years an outstanding figure in the Northern New York paper industry, has long been a power in state politics, serving as speaker of the state assembly and being mentioned several times for the Republican gubernatorial nomination.

The career of Mr. Machold is one of the most interesting of any figure in up-state politics in years. Born in Amsterdam, N. Y., he became a newsboy as a youngster and after leaving school entered a bank where he served for a time as clerk. He next studied law and then became a school teacher, having charge of a small school in Montgomery county. He then became a farmer and his interest in farming continued after he became identified with the extensive industrial development projects of the Carlisle interests in the North Country.

Increased Utilization of Southern Woods

MADISON, Wis., September 17, 1928.—In line with its frequently reiterated faith in the possibilities for increased utilization of southern woods for paper pulp the U. S. Forest Products Laboratory will send a representative and an exhibit to the Georgia State Forest Fair which is being held at Waycross, September 19 to 22 under the auspices of the Georgia State Forestry Department and the Waycross and Ware County Chamber of Commerce. Mark W. Bray, chemist on the Forest Products Laboratory's pulp and paper staff, will take the exhibit to Waycross and will make an address on National Day, September 21. The title of the address will be "Increased Utilization of Southern Woods," a topic on which Mr. Bray is well qualified to speak because of his years of intimate connection with research on the utilization of both the southern pines and hardwoods for papers of every grade.

The Forest Products Laboratory has prepared especially for the Forest Fair a booklet of samples of kraft, white wrapping, book, print, writing, and other papers made from southern woods. Specially prepared for the Fair also was the Laboratory's exhibit showing steps in the preparation of papers from southern pines.

Plan Power Development on Black River

[FROM OUR REGULAR CORRESPONDENT]

ALBANY, N. Y., September 17, 1928.—Beebee Island Power Association, of Watertown, is said to be planning a power development project on the Black River which may result in the electrification of several industrial establishments, including the mills of Knowlton Brothers. The association is made up of several concerns, including Knowlton Brothers, owning water power rights on the river. The Beebee Island power site is considered one of the most valuable along the Black River. While the plans are said to be still incomplete the project calls for the erection of a dam and power house. The development has been under consideration for some time but only recently the owners were able to reach an agreement to proceed with the work.

General View of Chattanooga Plant

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AN ORGANIZATION FOR THE ENCOURAGEMENT OF ORIGINAL INVESTIGATION AND RESEARCH WORK IN MILL ENGINEERING AND THE CHEMISTRY OF PAPER, CELLULOSE AND PAPER-MAKING FIBERS GENERALLY; IT AIMS TO PROVIDE MEANS FOR THE INTERCHANGE OF IDEAS AMONG ITS MEMBERS IN ORDER THAT PROCESSES OF MANUFACTURE MAY BE MADE MORE EFFICIENT AND IMPROVED ALONG TECHNICAL LINES.

Edited by
RONALD G. MACDONALD, Secretary

Whitewater Re-Use*

By L. M. Booth [1]

From a fairly intensive experience with the subject, I conclude that the average papermaker would define whitewater as something which flows away from the paper machine. Formerly, the faster it flowed—and the further—the better he was pleased. Now, there are exceptions to this rule and many believe with the writer that whitewater, as defined above, has no place in modern paper making.

During the Development Period

During the period of development of the idea that the whitewater is valuable, the thought was fostered that in order to be useful it should be separated into its components—stock and water—and that the stock should be saved. The man who coined the word "saveall" should have a lot to answer for, since by the type of name he gave his device, we are to understand that the liquid to be handled carried something to be recovered. Perhaps, in the future, when the thought of "useall" becomes more common, we shall look upon the "saveall" with the same degree of reverence as we now consider the oxcarts and covered wagons which brought our white ancestors from the Atlantic seaboard to Wisconsin.

The Trend Today

Today the trend is toward the direct use of the whitewater, in so far as possible, without the separation of its components. Until comparatively recently, the shower water for fourdrinier and cylinder machines was almost universally fresh water. Now, however, in many cases on cylinder machines making chip and cnotainer board, fresh water is used for felts only. Whitewater, or in some instances even fan-pump water, is used on the moulds. On fourdrinier machines whitewater is used for all showers with the exception of sprays and possibly the couch shower.

Chemically Treated Water for Felts

At the present writing some chemical treatment seems to be desirable where whitewater is to be used on felts, if efficient and satisfactory cleansing is to be obtained. This conclusion has been reached following several years' sustained performance with a number of grades of board.

By proper chemical treatment of whitewater we now know that it will deliver more service than formerly. Moreover, it leaves no bad odor. Bad odor is a distinct evidence of decomposition. This, in turn, is measurable in terms of loss of stock and consequent high shrinkage. Among the means now available to prevent decomposition of stock while in process of manufacture, is chlorination. This, however, should be used with a full knowledge of the requirements in order to obtain the desired results.

Heat Conservation

Where a closed system is in operation the stock which is saved does not represent the sole economy effected. In board manufacture, where the stock is heated in the beaters, this heat should not be lost. Where a minimum of fresh water is used to make up such small incidental losses as occur in practical operation it is not difficult to maintain the whitewater for reuse at a temperature of about 110 degrees F., even during the winter months. The use of this warm water, which is favorable for felt washing, insures longer felt life.

Rosin Size in Whitewater

One of the hurdles to be jumped when proposing the reuse of whitewater is to overcome the objection due to the presence of size which was not retained in the paper. If papermakers could be persuaded to confine their sizing operations to the paper or board instead of making the product share the sizing chemicals with the whitewater, more rapid progress in whitewater reuse would be made. This is not merely a novel suggestion, since increased size retention has been practiced in a number of mills in recent years through the aid of special treatment provided to accomplish the end desired.

In approaching the problem of handling whitewater the average man seems to look at it from the surface only. He develops a plan whereby all the whitewater from several paper machines is handled through a single piece of equipment. This results in degrading the more expensive pulp to that of the cheapest grade recovered. As a final step, the separated water is usually wasted.

The whitewater problem should be viewed as one of papermaking rather than one of waste recovery. If this view is taken the approach will be made from a different angle. Each paper machine should be considered as an individual unit. Stock which has once been delivered to a paper machine and which has found its way into the whitewater should be returned directly to the same machine. The water should be reused repeatedly. There is as much logic in leading the fan-pump water off to a disposal plant or recovery system as there is in considering any other paper machine effluent as something foreign and apart from the machine operation. Conserve and reuse the whitewater. By so doing, costs of production not only decline, but the problem of stream pollution vanishes.

* To be presented at Fall Meeting of TAPPI, Wausau, Wisconsin, September 25, 26, 27, 1928.

[1] Member TAPPI; President Booth Chemical Company, Elizabeth, N. J.

The Manufacture of Safety Paper

Part II. Chemical Surfacing of Paper

By Joseph Rossman [1]

This survey of U. S. patents covers the methods of making safety paper in which the finished paper is treated superficially in some way as by impregnation with chemicals which will be discolored by ink eradicators. The patents covering special printing methods for producing safety paper are also included here.

1 Seropyan, 14,069. January 8, 1856.

The invention consists in using oil-colored paper for bank-notes, drafts, and all other papers representing value, and printing them with indigo-ink, or an ink which would equally reflect or transmit the chemical rays of light, and which is equally or more fugitive than the color of the paper itself, so that when an attempt is made to copy the bank-note by photographic process there will not be produced a distinct copy of the said bank-note.

2. Carey, 27,857. April 10, 1860.

Safety paper made by uniting two or more layers or sheets of paper or other suitable material, upon or through one or more of which layers or sheets distinctive letters, figures, or configurations have been previously formed, either by puncturing one or more, but never the whole of the said layers or sheets, or by printing, coloring, or otherwise making distinctive marks upon either of the inner surfaces of the layers or sheets.

3. Lea, 38,231. April 21, 1863.

Printing the ornamental part of the note as distinguished from the ground tints in fugitive and the obligatory and denominational part in permanent color.

4. Olier, 38,835. June 9, 1863.

A paper composed of three layers of different thicknesses, of which the central layer is or may be colored with delible or easily-removable color and the external layers are or may be charged with silicate of magnesia or other mineral or vegetable matter.

5. Gibson, 41,118. January 5, 1864.

The printing of postage and revenue stamps, with an impression or impressions made wholly or partly in fugitive ink, which will be destroyed or removed by the destruction or removal of the ink employed for their cancellation.

6. Harmon, 41,505. February 9, 1864.

The employment of the same ink to cancel a letter or revenue stamp which has been previously used to impress lines upon the face of the stamp.

7. Loewenberg, 42,207. April 5, 1864.

A postage, revenue, or other stamp produced by printing on size applied to paper or other material to prevent the penetration of the ink, and applying the adhesive material to the opposite side of the paper, so that when the said stamp has been attached to a letter or other document and canceled by over-printing in the usual way the cancellation-marks cannot be removed without destroying or effacing the print.

8. Francis, 48,389. June 27, 1865.

Paper but little or not at all sized or glazed is used. This paper is soaked in a solution of ferro-cyanide of potassium or an infusion of nut-galls. The solution may be applied on the side which is to be gummed, and the paper is then allowed to dry. Sulphate of iron reduced to an impalpable powder is rubbed onto the opposite side or face of the stamp, and the back is gummed over in the usual manner. The face of the stamp may be coated with a varnish or sizing, so that no ordinary dampness may affect the stamp before it is used. Instead of soaking the paper with an infusion of nut-galls, the paper may be soaked with a solution of sulphate of iron, and fine-powdered nut galls may be used in lieu of the powdered sulphate of iron. For postage stamps the paper is soaked in sulphate of iron before it is gummed. Otherwise the stamp is prepared in the usual manner.

9. Wyckoff, 53,723. April 3, 1866.

Coating the side of the paper which is to receive the print of the postage or revenue stamp with a surface of water-color pigment or paint, or some sufficiently opaque or non-transparent surface as to receive a good impression from the types or plates, and at the same time be soluble in water or other fluid.

10. Jones, 54,834. May 15, 1866.

The process of manufacturing bank-notes, bonds, or analogous securities by applying ink or coloring matter to unsized or partially sized paper, so that it will penetrate or come into actual contact with the fiber thereof, and afterward applying a coating of size to permeate the paper, cement its fibers, and prevent counterfeiting or alteration by the transfer or removal of the ink.

11. Jones, 54,835. May 15, 1866.

Covering the impression with a transparent film of paper or other fibrous matter.

12. Jones, 66,500. July 9, 1867.

After the completion of the printing operations upon unsized paper, it is treated with a compound size, which permeates the entire body of the paper and of the inks, imparts great strength and durability to the paper, and being insoluble in either acid, alkali, or water, makes it impossible to transfer the prints or remove them in any manner without destroying the bank note or other document under treatment. The size for this purpose consists of animal albumen, twenty parts; gum tragacanth, two parts; silicate of soda or potash, one part, the paper being heated (by passage between calender rollers or by any other suitable means) to from 150 degrees to 200 degrees, to solidify the size.

13. Sturgeon, 71,663. December 3, 1867.

A sizing for safety paper consisting of gum-dragon and albumen, equal parts; table-salt, sufficient for consistency; carbonate of soda, carbonate of potassa, silica, dissolved, and the quantity requisite added.

14. Kellogg, 77,887. May 12, 1868.

The invention consists in employing fugitive ink or water-color, which is so prepared that it will not be absorbed by the paper upon which it is put, and in so disposing this color in a design upon a stamp that it will not cross the lines or characters made in permanent ink, so that when the fugitive color is removed in part or entirely, the non-fugitive design will still indicate the character or denomination of the stamp or check.

15. Greenfield, 80,943. August 11, 1868.

A postage stamp prepared with acetate of lead, or other chemical, so that it can be cancelled by the action of sulphate of ammonia, or other chemical.

16. Casilear, 84,341. November 24, 1868.

Printing numbers in parentheses, or between any other marks or forms, on a fugitive ground or background, tint, or color, thus effectually preventing alteration of the figures or numbers.

17. Lenher and Spencer, 97,528. December 7, 1869.

The object of the invention is to prevent the restoration of cancelled stamps. This is accomplished by coating the paper, previously to printing, with a sizing, of which the essential ingredients are one pound of carbonate of lime, carbonate of baryta, carbonate of magnesia, or other earth which is insoluble in water, and easily decomposed by acids, carbonic-acid gas being readily eliminated, to which is added an ounce and a half of glue, two

[1] Patent Examiner, U. S. Patent Office, Washington, D. C.

ounces of gum-arabic, dextrine, or other gum, which is readily soluble in water, and one quart of water.

18. Price, 105,125. July 5, 1870.

The paper is cut in sheets of suitable size, and floated on a bath or solution of from twenty to forty grains of nitrate of silver to one ounce of water, for from ten to thirty seconds, according to the strength of the bath. When dry, expose it to the light, whereby the color of the paper changes from white to gray, the depth of the shade being dependent upon the time of the exposure. When the paper has assumed the desired shade, soak the same in water for a few minutes, then take it out and place it in a bath or solution composed of one quart of water to two ounces of hyposulphite of soda, leaving the paper remain in this solution for from ten to fifteen minutes. Then wash in clean water and hang up to dry. By these means a paper is obtained of a uniform gray color.

19. Paquet, 114,963. May 16, 1871.

The amount for which a check or other paper of value is drawn produced in the body of the paper by a die of hardened steel, or equivalent, acting against a bed or block, likewise of hardened steel, or equivalent, acting against a bed or block, likewise of hardened steel, whereby the fibers of the paper are compressed and the impression rendered translucent.

20. La Monte, Saxe, and Clayton, 121,946. Dec. 19, 1871.

A colored paper superficially dyed in the sheet in or immediately after the process of sizing, during the course of manufacture, and with colors which are fugitive under the action of the acids and alkalies employed for the fraudulent removal of writing, for the purpose of affording a double means of disclosing the alteration of written documents whether effected by erasure or by the use of chemicals.

21. La Monte and Saxe, 123,782. February 20, 1872.

The object of the invention is to figure the paper by tinting in various shades or depths of color for purposes of ornamentation as well as to facilitate the discovery of fraudulent alterations by rendering the fugitive tints more difficult to restore after removal by erasure or chemicals.

22. Duthie, 125,550. April 9, 1872.

The invention consists in preparing the stamp, check, note or other document, either before or after printing or writing the same with a thin coating of writing-ink or fluid, by pen-ruling the same with the said ink or fluid in various forms or devices, colors, or combination of colors.

23. Walker, 127,663. June 4, 1872.

An adhesive stamp or label made of paper prepared with coal or other volatile oils, and having letters, figures, or other devices printed both upon the face and pasted sides.

24. Jameson, 137,775. April 15, 1873.

A design or designs are printed in the paper of such character as that by the use of chemical inks the design shall either be changed in color or obliterated, or, being invisible, or nearly so, shall be rendered visible at the parts written upon.

25. Steel, 169,125. October 26, 1875.

A postage or revenue stamp formed wholly of water-leaf or other soft and absorbent paper, provided on the back with a filling coating of starch or analogous material, and a superposed coating of the ordinary gum.

26. Schnoble, 171,871. January 4, 1876.

The method of preparing paper for printing postage or revenue stamps upon, consisting essentially of applying thereto a sizing compound of glue, sugar, glycerine, muriatic acid, and water, and then a composition of albumen, glycerine, and water.

27. Winner, 175,228. March 21, 1876.

A protecting film, formed of a series of bars, strips, or figures connected together and applied in a body to the sheet on which a series of stamps or other monetary papers are printed, so as to occupy a part of each stamp.

28. Weyde, 180,394. July 25, 1876.

The process of producing postage-stamps consisting of printing them with two different inks—one being the ordinary printing-ink, or other ink indestructible by heat, and the other consisting of bi-iodide of potassium, or other equivalent substance heretofore named, volatilizable at a temperature of 300° Fahrenheit.

29. Ehrhardt, 180,564. August 1, 1876.

A postage or revenue stamp, printed upon paper previously treated with a mixture composed, essentially, of gum-tragacanth, starch, and acetate of alumina or other soluble size, removable by moisture and friction.

30. Sangster, 190,376. May 1, 1877.

A postage or other stamp, one surface of which is provided or printed with a series of fine lines or dots in a colorless material, soluble in water, and over or on which rests the desired design, printed in ordinary printer's ink, whereby such portions only of the printing-ink lines composing such design, which rest upon the lines of the soluble material, may be removed by the application of a liquid, and rubbing with a force sufficient to remove, or partly remove, the ink which may be used in the cancellation of the stamp.

31. Van Nuys, 197,303. November 20, 1877.

A method of making safety paper consisting in first impregnating the paper with a soluble salt or salts of either nickel or cobalt, or the two combined, and then canceling, writing, or stamping, or printing upon the paper so treated with a soluble sulphide, so as to produce an insoluble colored sulphide in the texture of the paper.

32. Van Nuys, 200,365. February 12, 1878.

The process of preventing fraud in the use of stamps, checks, drafts, etc. consisting in coloring the paper from which such instruments are made with one or more colors, then impregnating such instruments with a soluble salt or salts of nickel or cobalt, or both, combined with a soluble salt of mercury, and, when dried, writing, printing, or stamping upon said instruments with a soluble sulphide.

33. Sangster, 202,760. April 23, 1878.

The method of preparing safety paper by first treating a part of its surface with an alkali or other chemical whereby the fiber is rendered more loose and absorbent in the parts so treated, and afterward washing the same or neutralizing the chemical used, so that the ink employed to cancel the stamp will be more firmly fixed in the stamp.

34. Spencer, 208,433. September 24, 1878.

A postal or revenue stamp having a portion or the whole of its gummed surface covered with hard granular material incorporated with gum.

35. Sangster, 220,092. September 30, 1879.

A postage or other stamp having on its face lines, dots, or characters consisting of caustic soda, or other material that combines or unites with or changes the oily, fatty, or resinous matter in the ink employed to form the design, thereby producing a soapy compound, or otherwise rendering the ink soluble in water or other liquids.

36. Hendrichs, 223,136. December 30, 1879.

The process of producing safety-paper by dipping ordinary paper in any aqueous solution of sulphate of copper and carbonate of ammonia and then drying the same, and finally dipping it in an alkaline solution of cochineal or other equivalent coloring-matter mixed with alum and glycerine.

37. Dummer, 225,748, March 23, 1880.

A paper or parchment evidence or representative of value having its identifying numbers, letters, or other marks covered with a coating of transparent or semi-transparent insoluble size, upon which is printed a design.

A good insoluble size may be prepared by dissolving in water about sixty parts of shellac, twenty-five parts of phosphate of soda, and fifteen parts of borax.

38. Fortier and Wyman, 227,559. May 11, 1880.

The method of making written documents on paper or parchment indelible which consists in subjecting the paper to an alcoholic solution of tannin with which the ink combines.

39. Sangster, 228,221. June 1, 1880.

The process of preparing safety paper which consists in treating portions of its surface with an alkali, so as to form characters or lines thereon, then immersing the same in a weak acid, and afterward washing it in water so as to produce water-mark lines.

40. Macdonough, 228,365. June 1, 1880.

The method of preparing safety paper by coating portions of its surface with a hard under layer insoluble in water, so as to mechanically hold up and thereby to make the ink on that portion of the surface more easily removed than the rest.

41. Hendricks, 237,746. February 15, 1881.

A double safety paper having a safety-tint embodied into the paper, and prepared of a vegetable dye or dyes and bi-chromate of potash, and having an auxiliary surface tint of a fatty ink prepared of pigments, bi-chromate of potash, and linseed-oil varnish.

42. Ford, 243,342. June 21, 1881.

The combination, with paper, of iron and tannin, or its equivalent, whereby such paper is rendered capable of producing or developing dark lines or marks by the application of moisture to its surface.

43. Nesbit, 248,198. October 11, 1881.

The use of ordinary paper on which is printed the required inscriptions or marks partly with an acid ink and partly with an alkaline ink, the same coloring-matter being used for both inks. The acid used is oxalic acid. The alkalies used are bi-chromate of soda and potash for a weak alkaline ink or solution and caustic soda for a strong alkaline ink or solution, the strength of the acid or of the alkali being reduced as required by dilution. When a check thus printed is treated with a solution which is alkaline or acid the whole of the printing is reduced to the same color.

44. Nowlan, 301,455. July 1, 1884.

Safety paper for checks and other documents of value, composed as follows: first, of an upper sheet of ordinary chemical paper bearing on the required portions of its under side thicklycharged lines or other devices of unalterable pigment in a soluble vehicle, and, secondly, in combination therewith, a backing of thin water-proof paper so cemented as to leave free from cement the parts thereof corresponding with the pigment lines, the object and effect of such partial cementing being to provide a series of collecting-ducts for the liquid used for removing writing from face of the document.

45. Clapp, 305,292. September 16, 1884.

The preparation and treatment of paper which consists in saturating it with a solution of gallic and tannic acids, or gallo-tannic acid mixed with gum and alum, and then printing and writing on such prepared paper with an ink or preparation containing ferrisesquichloride or other similar preparations of iron.

46. Schreiber, 322,130. July 14, 1885.

The process of producing safety paper wherein the paper material, after being colored with indigo, is treated with chromates insoluble in water, but soluble in acids, such as barium chromate.

47. Schreiber, 322,131. July 14, 1885.

The process of producing safety paper wherein the paper material of the finished paper is treated with ferric-oxide salts and with ferro-cyanides insoluble in water but soluble in acids—such as ferro-cyanide of lead or the like on the one hand, or ferric-oxide saccharate and ferro-cyanides soluble in water on the other hand—the paper being afterward treated with indigo or acid fuchsine.

48. Hill, 330,894. November 24, 1885.

The combination consisting of the paper or pulp or sizing, ferrocyanide of manganese, and hydrated peroxide of iron.

49. Schlumberger, 481,770. August 30, 1892.

A safety paper consisting in a sheet printed on both sides with coincident designs, the designs being arranged in coincident areas of various colors, the colors of the pairs of coincident areas combining to produce the same compound color.

50. Carvalho, 531,507. December 25, 1894.

A safety paper consisting of paper charged with bismuth iodide and sodium iodide.

51. Robertson, 538,625. April 30, 1895.

A paper or other articles printed, impressed or colored on different parts of its surface with one or more fast and one or more delible colors, forming continuous regular or irregular lines, at the dividing lines of the fast and delible colors.

52. Remke, 547,289. October 1, 1895.

The process for changing the ink-receiving qualities of paper which consists in first treating the material with a solution containing oil, allowing the material to dry, then applying an alkaline solution, and finally drying the material by heat.

53. Yetter, 595,281. December 7, 1897.

A safety paper having sets of parallel lines, of different colors printed or otherwise impressed thereon, said lines of different colors being microscopically fine and alternated so as to bring one line of one color between two lines of a color or colors differing therefrom, whereby the impression of a color differing from the colors of either of said sets of lines or marks is conveyed to the eye, and a space between each two of said lines.

54. Morrow, 630,255. August 1, 1899.

The process of writing ineradicably which consists in writing on paper containing asbestos with an acid ink and then carbonizing the lines by heat.

55. Colgrove, 643,084. February 6, 1900.

A safety paper adapted both to printing and writing, sensitized as to acids by immersion in a weak and cold solution of commercial lye and soluble indigo, without further bleaching or dyeing of the paper, and then cold-dried.

56. Higgins, 690,148. December 31, 1901.

A safety writing fabric consisting of a finely-woven fabric of cotton, linen or other fiber formed with a flexible and opaque body and a smooth absorbent and non-spreading writing-surface.

57. Snavely, 746,397. December 8, 1903.

A postage stamp having its face or printed side coated with a solution containing stearic acid and aluminium palmitate, oil of turpentine and benzene.

58. Rowan, 774,535. November 8, 1904.

A commercial safety paper consisting of ordinary paper treated with potassium prussiate, ammonia and water and provided with an overprint of ink consisting of iron perchlorate, potassium iodide and a caustic alkali.

59. Ives, 776,470. November 29, 1904.

In a safety composite-color print, a subground design in white or colorless material opaque to ultra-violet spectrum-rays, and a ground of juxtaposed colors which collectively absorb all of the visible spectrum-rays, in combination with a distinctive design or picture in transparent color which is optically similar to a mixture of all of the ground colors.

60. Ives, 776,515. December 6, 1904.

A safety composite-color print comprising two different designs printed one upon the other, each in a distinctive color, the spectrum absorption of one color comprising that of the other.

61. Franklin and Sage, 778,026. December 20, 1904.

A non-erasable check comprising a body of white bibulous material having a glazed back, and having a front surface having a color in contrast with the white body; there being a blank printed upon said colored face.

62. Ilch and Ilch, 852,840. May 7, 1907.

The method of protecting checks and other papers, consisting in impressing types against the back of the paper with such force that the impressions are translucent, and then in writing upon the face of the paper over such impressions.

63. Kimber, 894,664. July 28, 1908.

A check having water marks thereon indicating a specific sum in dollars, with coupons attached thereto having thereon indications of their face value, said coupons being each water marked so that the entire amount of the check, with coupons attached, in dollars and cents, will be shown by the water marks on the

checks and coupons, said check having a tinted body and having printing thereon, the one being sensitive to an acid and the other to an alkali.

64. Wilson, 953,081. March 29, 1910.

A safety paper consisting of a sheet of paper, a coating of sizing, partly charged with pigment to render it translucent, covering the face of the paper, and a background pattern of waterproof ink fugitive to chemical reagents sandwiched between the front face of the paper and the translucent coating.

65. Lorenz, 967,794. August 16, 1910.

The process of making a sensitive safety litho print on paper for security papers, which consists in incorporating a chemically sensitive coloring matter in an aqueous gelatinous medium, thoroughly mixing this with an oily medium, printing therewith, steaming the print, and eliminating the oily medium and aqueous gelatinous medium, leaving the coloring matter fixed upon the paper surface.

66. Lorenz, 969,549. September 6, 1910.

A sensitive security paper, consisting of a paper substance printed with a sensitive ink, said ink, when transferred on the paper substance, being, primarily, water soluble, but rendered, secondarily, water-insoluble by exposure of the print to a sufficiently high temperature.

67. Czettel, 1,005,696. October 10, 1911.

A safety label comprising a transparent paper coated on one side with a layer from which said transparent paper is detachable, a coating applied to said layer upon which coating a reverse text is imprinted, and a protective coating for said last named coating.

68. Todd and Tiefel, 1,144,742. June 29, 1915.

A commercial paper such as a check, draft, or the like, provided with portions thereof having the fibers of the papers disrupted and having its face value printed on said disrupted fibers in words spelled out in full, wherein the ink of the printed characters is impregnated into the disrupted fibers of the paper, the value words being printed in ink of one color, and bearing adjoining denomination words printed in ink of a contrasting color, and all said words adjoining each other in close proximity.

69. MacLaurin and Farrell, 1,177,787. April 4, 1916.

That method of treating paper which consists in applying to one surface thereof a component of a dye and in substantially simultaneously applying to the other surface thereof an adhesive having another component of the dye therein.

70. Schmidt, 1,217,076. February 20, 1917.

Safety paper impregnated with a solution of ferro-cyanide of potassium or its specified equivalent, ox gall, and magnesium sulphate, the paper being treated with coloring matter which is changeable by acid and alkaline ink eradicators.

71. Reece, 1,261,292. April 2, 1918.

A safety paper for negotiable instruments or other commercial paper having chemically sensitive water insoluble coloring matter embedded in the fibers of the paper, said coloring matter being devoid of a vehicle.

72. Morris and Bryant, 1,269,487. June 11, 1918.

Paper, provided with a printed ground of ordinary fluid writing ink and adapted to receive characters applied in the same identical ink.

73. Schmidt, 1,269,863. June 18, 1918.

A safety paper comprising a paper coated with a composition containing sodium or potassium ferro-cyanide, sodium or potassium iodide, glycerine, ox-gall, tapioca flour, and caustic soda.

74. Lee, 1,299,484. April 8, 1919.

A bank note, bond or other security, consisting of a sheet of paper having an underlying printing of light lines in intaglio and in a pigment of a relatively invisible character, and a superposed or overlying printing of heavier lines in intaglio and in strongly pronounced color designating the nature of the security, said printing including the border vignettes and such other matter as may be required and in all parts underlaid by the first stated printing in the pigment of relatively invisible character.

75. Carvalho, 1,353,720. September 21, 1920.

A process for the protection of monetary and other documents which consists in coating the writing on said documents with a thin layer of a mixture of waxy material, and a substance which will discolor the paper of said document and said waxy material when any chemical ink eradicators are applied to said writing.

76. Longmesser, 1,390,959. September 13, 1921.

A method of protecting checks which consists in printing the background of the check and the printed matter on the same in safety ink of the same general character, so that chemical obliteration of the background will destroy the identifying matter and render the check valueless.

77. Goodman, 1,417,820. May 30, 1922.

Black or dark-surfaced paper coated with an opaque but light-colored composition sensitive to a chemical eradicator or susceptible to removal on the erasure of the ink writing being attempted.

78. Dow, 1,428,278. September 5, 1922.

A printed article having a figure or design impressed in different portions with inks having the same color to the naked eye but different colors when viewed through a spectroscope.

79. Becker, 1,431,903. October 10, 1922.

A safety paper for negotiable instruments, including characters printed thereon in permanent design, the characters being of thin but permanent form so as to be easily obscured; and a second design impressed upon the first design and bearing characters which stand out distinctly, said second design being printed in fugitive characters, whereby, when erased, the underlying characters will be brought to view and invalidate the negotiable instrument.

80. Smith, 1,449,453. March 27, 1923.

The process of making safety paper which consists in incorporating in the paper ultramarine, an insoluble lead salt and an alkaline carbonate, and sizing the paper with a solution containing a manganese salt decomposable by a hypochlorite of an alkali.

81. Weeks, 1,506,144. August 26, 1924.

The method of producing a tinted safety background for bank checks and other documents which consists in so applying colored lines to such background as to produce a uniform variation of colors at definite repeated intervals and at the same time a legend insert in a contrasting flat color.

82. Murray, 1,509,872. September 30, 1924.

A method of making permanent records on sized paper which consists in impregnating the paper with a reagent capable of yielding nitrous acid and applying to the surface of the paper an ink capable of penetrating the sized paper and reacting with the reagent to liberate nitrous acid and precipitate a pigment within the body of the paper.

83. Murray, 1,514,222. November 4, 1924.

A method of producing permanent records which consists in printing paper with an ink consisting of a solution of beta-naphthol and potassium nitrite in glycerine, and an ink consisting of a solution of dianisidine and beta-naphthol in lactic acid, the two inks reacting chemically within the body of the paper to produce a fast azo color.

84. Sammet, 1,535,863. April 28, 1925.

The process of making paper safe against chemical erasure which comprises the application to the surface thereof of a material including an insoluble salt of benzidine.

85. Sawyer, 1,575,940. March 9, 1926.

The process of making paper currency, bonds or other instruments of value which comprises printing the desired design on the paper body with ink adapted to give strong adherence with the protective coating employed, substantially drying the design and successively spraying on both sides of the paper currency a thin solution of cellulose ester dissolved in volatile solvent and drying the same to secure permanent union of the thin substantially transparent colloidal coating with the design and with the exposed

paper body to promote the strength and impermeable character thereof.

86. NEFF, 1,578,908. MARCH 30, 1926.

The method of making safety paper which consists in printing warning indicia thereon with a colorless aniline-chloride compound, and stabilizing the warning indicia by the addition of a small quantity of sulphurous acid to said compound.

87. SMITH, 1,588,201. JUNE 8, 1926.

A safety paper printed with a pattern adapted to simulate natural surface inequalities of a paper characteristic of a process of manufacture, said pattern being printed in sensitive ink adapted to react with and to be conspicuously deepened in color by chemical ink eradicators applied to the paper and to thereby serve as a warning of alteration.

88. MURRAY, 1,589,210. JUNE 15, 1926.

A method of protecting documents against alteration which consists in treating paper with a mixture of dehydrothioparaluidine, beta-naphthol and sodium nitrite which react with either an acid or bleaching agent to produce a clearly visible color in the paper.

89. MACCORDY, 1,622,329. MARCH 29, 1927.

A blank for a negotiable instrument having thereon appropriately designated spaces for the entry of the usual data, the said blank having, further, a delineated space, the fibers of which when disrupted are less susceptible to replacement than the fibers of the remainder of the sheet.

90. GENOESE, 1,626,078. APRIL 26, 1927.

A safety paper comprising a sheet of paper treated with a mixture containing sodium bromide, and with a mixture of zinc sulphate, nickel chloride and iodine.

91. SMITH, 1,627,254. MAY 3, 1927.

A safety paper having alpha-naphthidine incorporated in the body or sizing thereof.

92. NEFF, 1,652,042. DECEMBER 6, 1927.

A safety paper having applied thereto a colorless aniline salt compound which is visibly reactive to bleaching or eradicating agents, and warning indicia impressed on the paper with said compound, the applied compound adapted to form a visible background against which the impressed indicia are discernible.

93. ORNDORFF, 1,662,509. MARCH 13, 1928.

A safety paper impregnated with a sufficient quantity of a 1, 3-dimethyl ether of pyrogallol substance to yield a conspicuous stain when treated with an eradicating reagent.

The "Kerosene Test" for Roofing Felt

By P. W. Codwise [1]

The following method for performing the "Kerosene Test" is being published as a contribution from the Roofing Felt Committee. The test was sponsored by the Prepared Roofing Association some years ago and is at present in more or less general use in various modifications of its original form. The following method follows the original in its essential features and is here presented as a tentative method as a result of a committee survey.

Purpose of the Test

The object of this test method is to obtain a figure for the maximum saturating capacity of roofing felt and similar materials. This figure, called the "Kerosene Test," is arrived at by means of a measurement of the amount of voids in the felt. This felt test is of value, for when properly used it gives an indication of how much asphalt the product may be expected to take up under definite saturating machine conditions. To be of greatest value its results should be interpreted in connection with the results of a test for rate of saturation.

Apparatus Required

The apparatus needed for this test consists of a small glass stoppered burette, graduated in 0.1 cc., preferably not over 25 cc. capacity, together with a suitable burette stand; a small balance sensitive to .01 gm. and suitable for rapid weighing of the sample; a supply of water white kerosene of 45.0 deg. Be. test; and a suitable oven for drying the sample.

Description of the Test

The "Kerosene Test" consists in saturating the sample of the dry felt with a measured volume of kerosene, which is adopted as being a suitable liquid saturant, for the purpose of determining the amount of voids in the sample, and the figuring therefrom of the theoretical possible per cent of asphalt saturation of the sheet. This calculation gives consideration to the weight of the sample, the volume of kerosene the sample will absorb and the specific gravity of saturating asphalt which is assumed to be 1.04. In other words we determine the maximum percentage of asphalt the felt may normally be expected to hold within itself under ideal machine conditions.

Procedure

A sample of the felt is cut 2½ inches by 5 inches, bone dried in a suitable oven, weighed to an accuracy of 0.01 gram and tested; the weighing and testing should be done without delay as the dry felt rapidly absorbs moisture from the air. The burette is filled to the mark with kerosene and allowed to drain for 60 seconds before reading; the beaker is rinsed with kerosene and well drained prior to placing beneath the burette.

The weighed sample of felt is held slightly inclined from the horizontal with the left hand and a fine stream of kerosene is directed upon it from the burette, moving the sample about, meanwhile, to distribute the kerosene uniformly. As the felt sample approaches the saturation point the rate of flow is reduced to a slow dropping and the sample is handled so that all excess kerosene falls into the beaker. The sample is treated with kerosene until darkened all over and until the entire surface possesses a characteristic glazed appearance. The flow of kerosene from the burette is then stopped and the sample held so that its diagonal is vertical and is drained over the beaker for exactly 30 seconds.

The saturated sample is then discarded, but the drained kerosene is poured from the beaker back into the burette and the burette is allowed to drain for exactly 60 seconds, after which the final reading is taken. The net cubic centimeters of kerosene consumed is a direct measure of the quantity of voids and this figure is used to calculate the kerosene test as described below. An alternative method is to omit pouring back the kerosene from the beaker, but to count the number of drops of kerosene drained from the sample, assigning an average value of 0.03 cc. to each and adding to the burette reading.

Calculation of Results

The theoretical quantity of asphalt the sample will hold is determined as follows:

(Volume of liquid in cc.) × 1.04 = Weight of asphalt in grams.
(Weight of asphalt in grams) ÷ (Weight of sample in grams × 100 = Kerosene Test, or theoretical possible asphalt saturation.

In other words the net cc. of kerosene (i.e., the volume of voids in the felt sample) is multiplied by the assumed average specific gravity of asphalt, which is taken at 1.04 and this result is then divided by the weight of sample and multiplied by 100 to obtain per cent. In this calculation, which is based upon the assumption that 1 cc. of specific gravity 1.00 equals 1 gram, a knowledge of the exact specific gravity of the kerosene is unnecessary, inasmuch as the kerosene is used merely as a vehicle to determine the amount of voids in the felt.

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Current Paper Trade Literature

Abstracts of Articles and Notes of Papermaking Inventions Compiled by the Committee on Abstracts and Bibliography of the Technical Association of the Pulp and Paper Industry

Clarence J. West, Chairman

Review of Researches at the Norwegian Technical Institute (Hiskole) during 1927. Relating to the Paper and Cellulose Industries. S. Schmidt-Neilsen. Paper-Journ. 15, No. 23, 305-11 (1927). A review of the work of 1927 concerning standardization of analytical methods, bleachability determinations, production of pulp by the use of chlorine, and the effective cooking temperatures in the soda processes.—C. E. P.

Color Problems in Paper Mills. J. R. Roberts. Paper Mill 50, No. 44, 10, 24, 26 (Oct. 29, 1927). A discussion of problems encountered in maintaining the color of paper uniform, exemplified by means of concrete examples from mill practice.—A. P.-C.

Paper Mill Effluents: A New Recovery Process That Effects Economy and Prevents River Pollution. Anon. World's Paper Paper Trade Review 89, 450-454 (Feb. 10, 1928). In the Marx sedimentation save-all the white water, or other effluent, constantly flows into the inlet funnel in regular volume. It overflows the circular horizontal brim of the inlet funnel in a thin sheet, falling through a relatively large distance so as to strike an umbrella-shaped distributing funnel almost divided into drops, whence it flows into an inner funnel, the flow being such as not to set up eddies in the body of the fluid. The thickened fibers and solids are collected at the narrow end of the funnel, from where they are constantly withdrawn at a predetermined density, while the clarified water slowly rises up between the walls of the inner funnel and the outer funnel, to overflow in a thin film of even thickness the whole circumference of the rim into a discharge trough. A recovery of up to 99 per cent of the usable fiber in the white water is claimed.—A. P.-C.

Paper and Inks. E. Morin. Mon. Papeterie Belge 7, 625-627 (Oct., 1927). A brief discussion of the types of inks which should be used on various grades of paper or of the grades of paper which should be used to obtain certain color effects.—A. P.-C.

Packing Paper In Cartons. A. W. Leslie. Paper Mill 50, No. 48, 26-29, 42-46 (Nov. 26, 1927). A comprehensive analysis of the advantages and disadvantages of the plan, as viewed by the paper merchant.—A. P.-C.

The Analysis of Acid Resisting Bronze, Atimonial Lead, and Babbit. R. F. Smith. Pulp and Paper 26, 106-107 (Jan. 26, 1928). The methods used in the laboratory of the Hoyt Metal Co. of Canada, Ltd., are briefly described.—A. P.-C.

Chromium Plating in the Paper Industry. Hugh D. McAllister. Paper Mill 50, No. 42, 38-39 (Oct. 15, 1927). An outline of the occurrence of chromium, its properties, a brief history of the development of chromium plating, the uses to which it has been put and its applications in the paper industry.—A. P.-C.

Use of Pure Iron in the Paper Industry. D. M. Strickland. Paper Ind. 9, 1161-1163 (Oct., 1927); Paper Mill 50, No. 44, 18-20 (Oct. 29, 1927). Brief discussion of the advantages of pure iron over steel in resisting corrosion.—A. P.-C.

Bearing Metal Bronzes. Harold J. Roast and Fred Newell. Pulp and Paper 25, 1325-1330 (Oct. 20), 1359-1362 (Oct. 27, 1927). Data are given on composition, metal cost, yield point, tensile strength, elongation, deformation limit, Brinell hardness, sclerescope hardness, compression under 50,000 and 100,000 pounds, weight per cubic foot, and microscopic structure of a number of bearing alloys fabricated under strictly commercial conditions, from either virgin or used metals as ordinarily obtainable on the open market. Where pertinent the tests were made on the original melt, remelt and annealed metal. Conclusions: (1) the casting of an alloy into ingots and subsequently remelting these for the actual casting is not a necessity, and it does not necessarily make for a metal having superior constants, provided the original melting and alloying were properly carried out. (2) Increasing lead and decreasing tin in a bronze does not necessarily soften it, and lead can therefore be used with greater freedom than some have thought, provided it is properly alloyed. (3) Bronze made from a good used metal will make just as satisfactory castings as when virgin metal is used. (4) A white metal alloy composed of zinc, copper, and aluminum can be satisfactorily used in place of the more costly high tin bronze for heavy pressure duty, such as bridge turntables, etc. (5) In requiring the Brinell hardness figure as part of a specification for a bronze, a clear statement should be made as to where and how such a test is to be applied. Numerous microphotographs are given and discussed.—A. P.-C.

Colloidal Chemistry in Papermaking. R. Sieber. Bum. Prom., 6, No. 2, 88-93 (Feb., 1927). Papermaking is not a mechanical process, but a physico-capillary and colloidal-chemical process. The formation of the sheet of paper is determined by the surface energy of the vegetable fibers. The transfer of the wet sheet from the wire screen to the felt is made possible by the difference in the degree of capillary attachment of the fibers to the felt and wire. On the paper machine the laws of capillarity are followed in that the fibers compact themselves as the water is driven off, i.e., the sheet shrinks as it dries. There is a capillary suction of water from the sheet through the felts. The hot cylinders coagulate the cellulose gel and evaporate the colloidally combined water. In the beater the gel of the vegetable fibers is separated into its component parts due to swelling and grinding. Pulp may be spoiled, for example, by exposure to the sun, so that hydration in the beater is impossible. This is due to irreversible dehydration. Excessive swelling of pulp decreases its opacity. Swelling of fibers in the beater starts at the outer surfaces of the fibers and penetrates to the inner surfaces in 6 to 9 hours. Mechanical treatment in the beater causes formation of a homogeneous slime. This slime is necessary for the production of strong paper of good writing quality. Formation of slime can be accelerated by the addition of substances like "Mucigen" and the beating time is correspondingly reduced. Kraft paper is made stronger by the incomplete washing of the pulp. The alkaline cooking liquor has a peptizing action on the rosin and fat constituents of the sulphate pulp. Cellulose immersed in 0.1 per cent lactic acid showed maximum observed swelling, the amount of water taken up being 5 times the weight of the cellulose. Electrolytes have a retarding effect during beating because their cations coagulate the negatively charged cellulose. The retention of loading materials by cellulose and the coloring of paper are typical colloidal-chemical problems and as such are being studied by the author. The sizing of paper is a colloidal phenomenon and all of the sizing materials are colloids. The efficacy of aluminum sulphate in depositing the negatively charged particles of the colophony sol is due to its trivalent cation. Aluminum sulphate was found to deposit 150 times as intensely as sodium sulphate. Anions have a peptizing action upon a rosin suspension. Protective colloids like starch and gelatine affect the stability and rate of settling of solutions of rosin size. Thus casein may retard or promote electrical coagulation depending upon various conditions. The value of aluminum sulphate lies not only in its trivalent aluminum ion, but also in the action of its sulphate upon the peptizing alkali of the rosin soap. The interaction of the sulphate with the alkali causes the hydrolysis of

the aluminum ions are changed to the colloidal hydrate of aluminum oxide. If magnesium sulphate, sodium acid sulphate, or sulphuric acid are used in place of aluminum sulphate, the paper is not permanently sized. This phenomenon cannot be explained by purely chemical theory, which considers sizing due to the formation of aluminum resinate. Aluminum resinate cannot be formed in the beater to any great extent. Hydrated aluminum oxide causes the better distribution of the rosin particles by preventing agglomeration of rosin. Furthermore, being positively charged it brings about an iso-electric condition with the negatively charged cellulose and rosin. If alum is not used in sizing, there is not sufficient positive electricity to neutralize the negatively charged cellulose and rosin with the result that there is sufficient repulsion to rupture the rosin crust on the fibers and destroy the sizing. Sizing experiments are being conducted in which cellulose and rosin are ground together in a Plauson or Osterman mill and aluminum sulphate is added for electrical equilibrium.—M. L. C.

Method of Comparing the Productivity of Paper Mills. A. Sokolov. Bum. Prom., 4, No. 1, 27-29 (Jan., 1925). In order to compare the efficiencies of different paper mills, or of the same paper mill for different periods, conversion factors for translating various grades of paper to an assumed mean grade must be used. It is suggested to consider the beating time required by the various fibrous materials at the determining factor for this productivity of a mill.—M. L. C.

Soda-Silicate: A Chemical and Microscopical Investigation. James Scott. Paper Maker and Brit. Paper Trade J. 74, 365-369 (Oct. 1, 1927). From a brief discussion of the mechanism of the precipitation of water glass and of the drying of water glass films, as seen under the microscope, the author considers that the merits of water glass in paper making lie chiefly in the direction of improving its quality, rather than as a sizing agent.—A. P.-C.

Control of Acidity and Akalinity in the Manufacture of Paper. W. A. Taylor. Paper Ind. 9, 1144-1146 (Oct., 1927); Pulp and Paper 25, 1495-1496 (Nov. 24, 1927). An explanation of the meaning of hydrogen ion concentration and pH and its determination by means of indicators, with an outline of its value in controlling various steps in paper manufacture, such as sizing, filling, coating, coloring, white water recovery and water purification.—A. P.-C.

Modern Pulpstone Production. W. G. MacNaughton. Pulp and Paper 26, 5-6 (Jan. 5, 1928). A brief description of the production of pulpstones at the Empire, Ohio, and Opekiska, W. Va., works of the Smallwood Stone Co.—A. P.-C.

Disposal of Pulp and Paper Mill Waste in Pennsylvania. W. L. Stevenson and F. P. Klund. Paper Trade J. 85, No. 24, 45-46 (Dec. 15, 1927). Report to the Sanitary Water Board of Pennsylvania by the Pulp and Paper Waste Disposal Committee of Pennsylvania outlining the method of organization adopted by the Committee for the investigation of pulp and paper mill waste disposal in that state.—A. P.-C.

New Waste Disposal Survey. Anon. Paper Trade J. 85, No. 24, 47-50 (Dec. 15, 1927). An account of the second meeting of the National Waste Utilization and Stream Improvement Committee for the Paper and Pulp Industry, held November 18, 1927, at the Union League Club, Chicago.—A. P.-C.

Measurement of Hydrogen-ion Concentration in the Control of Pulp and Paper Manufacture. Kurt W. Francke and J. J. Willaman. Ind. Eng. Chem. 20, 87-95 (Jan., 1928). A study of the possible uses of hydrogen-ion measurements in the control of pulp and paper manufacture, which was carried out by the electrometric method using the Bailey, bubbling hydrogen, quinhydrone and antimony electrodes, led to the following conclusions: (1) The hydrogen electrodes gives a valuable information about many pulp mill liquors, but in sulphite solutions with a pH of less than 7.0 the readings cannot be taken as true pH values. (2) The quinhydrone electrode is untrustworthy in the presence of sulphites or other oxidizing or reducing compounds. It is questionable on water, unless the latter is acid. (3) The most generally useful electrode in the pulp and paper mill is antimony, the best type being the ordinary pure stick preparation of a radially crystalline structure. This electrode has the following advantages: (a) it requires no hydrogen; (b) it is inert towards sulphites; (c) it is mechanically sturdy; (d) it gives a fairly quick response when placed in solutions; (e) it is cheap and easy to secure; (f) it is admirably suited for continuous reading on recording instruments. (4) The measurement of pH should prove especially useful in the control of the preparation of cooking liquors, the addition of alum and size to the beaters, in water purification and possible in determining the end of the cooking process.—A. P.-C.

Process Steam and Power in Pulp and Paper Mills. R. G. Macdonald. Paper Trade J. 86, No. 5, 67-71 (Feb. 2, 1928). A discussion of the important heat wastes and of methods used to minimize them.—A. P.-C.

Paper Research of the United States Bureau of Standards During 1927. B. W. Scribner. Paper Trade J. 86, No. 4, 52--56 (Jan. 26, 1928). A brief review of the investigations of interest to the pulp and paper industry carried out at the U. S. Bureau of Standards during 1927.—A. P.-C.

Chemical Engineering Processes in Pulp and Paper Making. John D. Rue. Paper Trade J. 86, No. 7, 43-45 (Feb. 16, 1928). A brief outline of numerous chemical engineering processes involved in pulp and paper making.—A. P.-C.

Rex Paper Co. Installs New Deinking System. Anon. Paper Trade J. 85, No. 17, 72 (Oct. 27, 1927). A description of the installation.—A. P.-C.

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History of the Cellulose Research Laboratory at Montreal. Anon. Pulp and Paper 25, 1257-1261 (Oct. 6, 1927).—A. P.-C.

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Conducted by THOS. J. BURKE, C.A., Sec-Treas

Economic Considerations Affecting Commercial Budgets *

By John Madden [1]

When your directors invited me to come to Philadelphia and talk on the subject of budgets, I was on the point of declining because it seemed to me that the subject of budgets and budget preparation had been worn threadbare. But when I was permitted to use the topic as a peg upon which to hang other material, fully as important and closely related, I accepted.

Past Eight Years Difficult Ones

I venture to say that there has been no other period more difficult for business men generally than the past eight years; no other period when less reliance could be safely placed on past experience; no other period when the velocity and extent of changing conditions were as marked. One of the characteristic faults of our American industry has been the tendency to depend either upon a formula or to exaggerate the importance of a mechanism. We have not been content to limit the application of mechanics to its legitimate sphere, but on the contrary we are prone to apply a rigid technological process to conditions where some other factor—psychology, for example—is a dominant or controlling force. If there is one truth which the philosophy of business should teach us, it is the truth that the only certainty in business is its positive uncertainty. The one changeless law is the rule that business is constantly changing.

Psychology Plays Important Role

If the foundation of the budget structure is the estimate of the volume of business that is anticipated during the ensuing period, it is clear that the estimate must be predicted upon something more substantial than hope. While we may properly expect our national income to increase over the years, we must remember that it fluctuates from year to year and that psychology plays an important role in the decision as to how much of that income shall be spent for the various things or services which are presented to the consumer. In addition, one must take into consideration the changes in the price level which will affect all calculations made in dollars as well as changes in the cost of credit. As an illustration, let us consider the total corporate income from sales of all industry for the years 1923, 1924 and 1925. The statistics of Net Income of the Bureau of Internal Revenue reveal the following fluctuation:

Income from sales in 1923	100.00
Income from sales in 1924	100.63
Income from sales in 1925	112.49

Upswing ceased in spring of 1923; downswing lasted to fall of 1925; upswing to spring of 1926. Based upon experience of past seven years, rising cost of credit means present upswing will continue to the spring of 1929 but there may be a falling off in the summer. Since the war, we could depend upon improved business coming about one year after cost of credit began to move lower. This is followed by a downswing in building contracts and a fall in volume of manufactured goods.

Using 1923 as a Base

Using the year 1923 as a base, the income from sales increased slightly in 1924 over 1923, but increased 12 per cent in 1925 over 1923. But if we compare these results with similar results for the manufacturing group alone we discover the following condition:

Income from sales, manufacturing, 1923	100.00%
Income from sales, manufacturing, 1924	95.44%
Income from sales, manufacturing, 1925	105.93%

In other words, while there was a slight increase in 1924 over 1923 for industry as a whole, there was a decline of over 4 per cent for the manufacturing group. Whereas industry as a whole increased almost 12 per cent over 1923 in the year 1925, yet manufacturing increased only 5.93 per cent.

Since consumers exercise free choice as to the manner in which they shall distribute their purchasing power among the commodities and services offered, it is clear that the preparation of proper sales budgets depends not on what last year's results were, nor on what our hopes for the future may be, but upon a multitude of factors, among which may be listed: (1) increase in population; (2) increase in national income; (3) cost of credit; (4) fluctuations in demand and supply; (5) increased use of consumer credit or installment selling; and (6) shifting in demand because of consumer psychology, either independent of or stimulated by advertising. Combined with these, we have fluctuations in the price level and changed relationships in the structure of business through vertical, horizontal, and circular integration.

The Shift in Demand

The shift in demand may be illustrated by the table below which shows gross sales of sundry manufactured products by amounts in hundred thousands and percentages, using in each case the year 1923 as the base year. It will be noted that while the volume in 1924 was substantially lower in total than in 1923, yet food, beverages and tobacco, rubber, printing and publishing, stone, clay and

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glass moved distinctly against the general trend. In 1925, there was a general improvement, in some cases more pronounced than in others, but leather and leather products and the unclassified group moved against the trend.

TABLE 1
GROSS SALES OF MANUFACTURED PRODUCTS BY AMOUNTS AND PERCENTAGES
(in hundred thousands)

	1923	1924	1925
Food, beverage and tobacco	9,835	11,470	13,138
	100.00	116.62	133.60
Textiles	7,713	7,011	7,472
	100.00	90.88	96.87
Leather	1,564	1,479	1,469
	100.00	94.56	93.92
Rubber	1,061	1,103	1,422
	100.00	103.95	134.02
Lumber	2,864	2,723	2,802
	100.00	95.07	97.83
Paper	1,409	1,328	1,446
	100.00	94.18	102.62
Printing	1,522	1,662	1,735
	100.00	109.19	113.99
Chemicals	5,654	5,394	6,424
	100.00	95.40	113.61
Stone, clay and glass	1,328	1,349	1,456
	100.00	101.58	109.64
Metals	15,963	15,353	17,473
	100.00	96.18	109.45
All others	4,975	2,561	2,240
	100.00	51.47	45.02
	53,888	51,433	57,077
	100.00	95.44	105.93

This history of industry furnishes many illustrations of panaceas offered to business as remedies for various and sundry sorts of industrial ills. The north-west passage to prosperity has been sought at one time by one route and later by another. Those whose memories run back twenty years will recall the "efficiency" movement and its complex system of beneficial improvement which would instantly produce a thriving business out of hopeless conditions. At least, that was the claim of its projectors who assumed the euphonious title of "Efficiency Engineers." Experts in the new art were the recipients of lucrative fees for their services and good hard dollars were expended freely by soft-headed executives for hokum of the most potent variety. This went on until the field attracted too many players, whereupon the most nimble of the brood jumped into the new art of scientific management. Others dared not follow, for what reason I know not, but I can recall a dozen names commonly mentioned in the "efficient" era who were never heard of in the "scientific management" age.

Early Demise of Most New Scientists

The world war brought about the early demise of most of the new scientists for it was during that period of cost-plus contracts and rising prices that overhead flourished and business was neither scientific nor well-managed. Consumer resistance shortly after the war—an event which relatively few foresaw, but which was nevertheless the logical consequence of an industrial spree—brought its aftermath of headaches and remorse. The budget expert arrived on the scene and he is now receiving universal attention and will continue to enjoy favor until some other ingenious invention is contrived to harass the perplexed industrialist.

In saying this I do not mean that business may not be made more efficient nor that we have no need of skilled management nor that budgets are a wholly useless device. Quite the contrary. But I do wish to call attention to the fact that despite twenty years of efficiencying and scientific managing, we are scarcely more than sixty per cent efficient. What I desire to emphasize is that the budget is simply a valuable tool, useful in its proper field of action but not more important than other factors, and in point of fact, less important than some. The ability to discover the trend or to take measures to overcome the disadvantages of conditions or to fully capitalize the advantages is more important than the machinery through which results are measured.

The tendency toward lower gross and net profits has been recognized but the details are not so well known. Table 2 shows the percentages of gross and net profit for all corporate industrial enterprises for the years 1923, 1924 and 1925. There are distinct evidences of a radical decrease in general expenses in 1924 apparently in anticipation of the decline in volume. Whereas the difference between gross and net in the aggregate in 1923 was 17 per cent, yet in 1924 it was only 12 per cent, thereby indicating a reduction in miscellaneous general expenses.

TABLE 2

	Percentage of gross profit			Percentage of net profit		
	1923	1924	1925	1923	1924	1925
Aggregate	23.77	17.88	16.18	6.41	5.67	6.81
Agriculture and related industries	28.27	25.45	24.22	5.98	.89	2.83
Mining and quarrying	35.37	24.52	24.15	.82	.25	6.50
Manufacturing—						
Food	21.29	17.09	16.80	4.15	3.99	3.60
Textiles	20.64	16.82	17.41	6.50	2.06	4.11
Leather	16.72	17.61	17.64	2.45	2.77	3.26
Rubber	25.12	25.43	23.87	2.40	3.81	8.98
Lumber	26.82	23.33	23.38	9.37	4.66	5.38
Paper	24.38	23.29	24.32	6.92	5.75	6.97
Printing	37.41	28.36	28.07	7.66	7.76	7.73
Chemicals	27.19	25.67	26.89	7.39	8.49	10.05
Stone, clay and glass	33.64	32.52	31.68	13.05	10.94	11.25
Metals	29.63	25.13	19.13	7.89	7.31	8.58
All others	29.71	27.86	28.01	8.44	6.52	7.06
Total	26.14	22.42	20.65	6.93	5.70	6.74
Construction	15.82	14.22	13.94	3.50	4.43	5.40
Transportation and public utilities	37.94	34.95	33.96	13.46	14.11	14.26
Trade	19.33	18.07	16.40	3.04	2.41	2.62
Professional and amusement	41.73	19.60	18.25	5.79	5.75	6.75
Finance and banking	5.19	1.59	2.06	11.14	12.40	13.97
Combinations	20.43	14.61	11.58	6.10	3.50	4.97

A Noteworthy Coincidence

It is a coincidence worthy of note that the percentage which "cost of goods sold" bears to total receipts from all sources in the years 1924 and 1925 was identical. There was an increase in the average cost of goods sold for all manufacturing in each of the three years under review. But when we turn to the item miscellaneous expenses and note the increase in the aggregate average for all industry and the significant increase in the manufacturing industries coupled with declining gross and net profits, we appear to come to the heart of our problem. Whatever savings may have accrued from mass production or technical improvement, appear to be lost in an increase in overhead or cost of goods sold. There is a tremendous non-preventable economic waste under free competition—controlled only through "regulation." It should be borne in mind that during this period, mergers and consolidations were still going on, that presumably we were utilizing all the savings which are alleged to flow from such devices and that every effort was made to reduce overheads. Some of the individual increases are significantly larger than in 1923. Table 3 assembles the data in convenient form for analysis.

TABLE 3
PERCENTAGE WHICH EACH BEARS TO TOTAL RECEIPTS

	Cost of goods sold			Miscellaneous expense		
	1923	1924	1925	1923	1924	1925
Aggregate	61.93	63.38	63.38	22.75	21.82	24.72
Agriculture and related industries	51.35	53.77	50.30	29.00	31.40	36.97
Mining and quarrying	54.67	57.09	54.18	24.94	23.32	25.84
Manufacturing—						
Foods	76.75	79.67	81.19	14.49	12.24	12.89
Textiles	77.78	80.56	79.30	10.09	11.09	13.59
Leather	81.45	80.40	79.30	11.27	11.62	15.26
Rubber	73.56	72.88	72.95	17.04	16.33	14.62
Lumber	70.39	72.67	71.97	10.84	12.76	17.01
Paper	73.71	73.96	72.56	11.53	12.05	15.75
Printing	47.91	48.27	47.86	36.64	36.04	41.34
Chemicals	67.26	65.70	63.88	17.45	18.34	20.50
Stone, clay and glass	64.50	64.78	65.16	14.02	15.55	18.85
Metals	67.53	70.99	72.10	18.76	14.89	15.87
All others	68.01	67.97	68.60	17.32	18.70	21.46
Total	70.68	72.84	73.05	16.17	14.98	16.71
Construction	68.12	65.72	63.96	20.68	21.39	27.09
Transportation and public utilities	6.94	8.49	5.77	59.64	56.02	65.99
Trade	78.14	78.98	79.27	14.83	14.76	16.86
Professional and amusement	27.20	25.93	26.38	53.71	55.07	60.67
Finance and banking	25.22	24.36	33.96	39.98	39.44	39.28
Combinations	60.77	66.26	63.55	22.51	20.23	26.01

One trend of increasing importance is the fact that in some industries an increasing proportion of total receipts is derived from sources other than gross sales. Table 4 shows the percentage which gross sales bears to total taxable income. It will be noted that in almost every instance this ratio is declining. This is another way of saying that an increasing proportion of revenue receipts is derived from sources other than primary income.

TABLE 4
PERCENTAGE WHICH GROSS SALES BEARS TO TOTAL TAXABLE INCOME

	1923	1924	1925
Aggregate	$1.24	81.25	79.56
Agriculture and related industries	79.45	79.22	74.52
Mining and quarrying	78.78	81.61	78.33
Manufacturing—			
Food	97.51	96.76	98.00
Textiles	98.01	97.38	96.71
Leather	97.81	98.01	96.54
Rubber	98.23	98.31	96.81
Lumber	96.19	96.00	94.36
Paper	97.48	97.25	96.87
Printing	76.55	76.63	75.92
Chemicals	92.37	91.37	90.78
Stone, clay and glass	97.20	97.30	96.84
Metals	95.97	96.11	91.25
All others	96.76	95.84	96.60
Total	95.70	95.26	93.70
Construction	80.92	79.94	77.91
Transportation and public utilities	11.19	13.44	9.74
Trade	96.86	97.05	95.67
Professional and amusement	46.68	45.53	44.64
Finance and banking	26.60	25.95	36.02
Combinations	76.38	80.87	75.12

"Prosperity"

In Table 5 I have re-arranged the data showing under the caption "Prosperity" the results of those corporations which produced a net profit. Under the heading "Adversity" are shown the results of corporations whose operations were in "red." The table includes only the manufacturing corporations.

First, let us note that slightly over sixty per cent are prosperous, and that forty per cent are utilizing capital and labor in producing losses. While the consuming class benefited by obtaining goods at less than the cost to produce, yet another group in society, the creditor class, which includes creditors on open account, banks, bondholders, stockholders, and partners, sustained losses equal to the advantages which the consumer group realized.

You will also note that the net profit on sales of the "Prosperity" group continued to decline while the losses of the Adversity group increased with the exception of 1924.

One important factor is the increase in Other Income. In the case of the Prosperity group, the decline in Net Profit on Sales was largely offset by an increase in Other Income. In like manner, the net loss of the Adversity group was reduced by material items of Other Income.

Other Income

The increase in Other Income is reflected in the increase in marketable securities and other working assets which followed the deflation of 1920-1921. We can see clearly the beginnings of the immense cash reserves which American corporations began to create after the experience in 1920 of paying seven or eight per cent for borrowed funds. It would seem as though all had resolved never again to be in debt to the banks. Time will not permit me to go into this phase of the situation—interesting though such an excursion would be—but suffice it to say that the policy which began in 1922 will ultimately result in many radical changes in the structure of American industry.

TABLE 5
MANUFACTURING CORPORATIONS
(in hundred thousands)

	Prosperity			Adversity		
	1923	1924	1925	1923	1924	1925
Gross sales	46,738	43,184	49,613	7,150	8,252	7,470
Cost of sales	33,668	32,327	38,046	6,133	7,001	6,458
Gross profit on sales	13,070	10,857	11,567	1,017	1,251	1,012
Business expenses—						
Depletion, etc.	1,187	1,137	1,278	237	272	228
Miscellaneous	8,447	7,249	8,469	1,620	1,815	1,712
Total	9,634	8,386	9,747	1,857	2,087	1,940
Net profit on sales	3,436	2,471	1,820	(840)	(836)	(928)
Other income	2,033	2,213	3,396	387	345	439
Total	5,469	4,684	5,216	(453)	(491)	(489)
Deductions from income	889	816	834	223	298	195
Net profits	4,580	3,868	4,382	(676)	(789)	(684)
No. of corporations	53 795	51,342	54.137	31,404	35,461	34,537
Percentage	63.14	59.15	61.05	36.86	40.85	38.95

Note:—Items in parentheses are losses.

The manufacturing group reveals by far the largest share of loss-producing concerns and this is the special department of industry in which our efficiency engineering, scientific management, and budgeting practice have been most active. In the year 1925, the losses in the manufacturing group amounted to $682,000,000, of which metals produced $201,000,000; textile, $114,000,000; food, beverage and tobacco, $91,000,000; and chemicals, $82,000,000. In that year also, the manufacturing group produced 48½ per cent of the total corporate profit. We might argue, of course, that if it had not been for standard practice methods our losses would have been greater and there is no evidence to show that this argument is not well founded.

Problem of Loss Not New

The problem of loss is not new. Its solution was attempted in the last century by the organization of trusts. These were repugnant to public policy and brought forth the Sherman Anti-Trust Act. Later, the holding company form of organization was employed to bring together, in a form permitted by law, some of our largest producing units. In most instances the savings which were expected from these combinations did not materialize. More recently distribution mergers have been organized to parallel the production mergers. But mere combination does not seem to offer the solution. They require a correspondingly higher degree of skill and ability on the part of management and these qualities are not common. The production mergers do seem to have reduced costs to the consumer and to have stabilized markets. What the distribution mergers will do remains to be seen.

It is evident that those charged with the preparation of a budget for a business in a highly competitive industry are not only concerned with the usual materials of purely local significance but they are in fact concerned with an interminable set of economic factors of national and international character. Our manufacturing is not in a satisfactory state when such a large number of corporations do not earn interest on the investment. The maintenance of a form of competition which shifts wealth from the losing producers to the consumers is not equitable.

The narrower margin of profit in industry has its counterpart in lower rates of return on investments in bonds, preferred stocks, and common stocks. But before one can assume that the lower percentage of profit in industry is in fact an actual reduction, there must be a comparison of the purchasing power of the lesser number of dollars. Fluctuations in the purchasing power of budget dollars must be taken into consideration. Furthermore, these changes have their repercussion in endless forms. For example, decline in the dollar of inventories as well as the decline in quantities of stock carried is reflected in lower insurance costs to producers and in lower premium income of fire insurance companies. This is simply one illustration of the inter-action of economic forces which is so subtle as to escape the attention of the ordinary observer.

In spite of our giant combinations with their power to command the most talented executives and employees, with every form of mechanical device in factory and office, and I include budgets here to aid them, the fact nevertheless remains that immense advantages still rest with the smaller concern. In 1925, the total corporate and individual business profit amounted to 11 billion, 310 millions, of which individual business produced 3 billion 700 millions, or 32 7/10 per cent. For standardized staples we shall probably continue to look to our large and distributing corporations.

In the returns of net income submitted by business undertakings for income tax purposes, we have the materials for preparing a national balance sheet and income account. More than this, it is possible to segregate the data with such refinement as to enable similar statements to be prepared for individual lines of activity. Unfortunately the Congress has not been made to realize the importance of appropriating funds sufficient to pay for the cost of assembling the data promptly and in detail. The published data are not detailed enough to serve any useful purpose and the results for 1926 are not yet available. In a few cases, manufacturers' associations are attempting to collect statistics, but these are not by any means complete. Such information

should also show quantities as well as monetary amounts. The data would be valuable not only to competing concerns in the same line but also to those undertakings which supply goods as well as those which purchase. The correlation of external economic data with the facts of internal character is highly important and it is here that we are least efficient. Such material would be of incalculable value in determining trends from which all producers and consumers would profit. A large part of the risk of industry would be removed if this information were available. The cost to secure it would be nominal when compared with the amount of loss that would be avoided.

Marvelous as has been our development during the past decade, in spite of the demonstrated inefficiency in our industry, the problems of the next decade are to be no less difficult of solution. It hardly seems possible that we shall have as large an export surplus as we have had when the rest of the world recovers completely from the dislocation of the world war.

Intense Increase in Industrialization

There has been an intense increase in the industrialization of many countries in Europe and some of this exportable surplus must of necessity come into competition with us either in home or foreign markets. There seem to be sound grounds to support the view that we shall have an import surplus within the next decade. Evidently some change must be made to reduce the number of loss-producing industrial concerns as well as to reduce the monetary amounts of the losses. Whatever shift will be attempted is certain to affect all other concerns in the same field, and influence related industries as well. It will be evident upon reflection that commercial budgeting must take cognizance of all of these economic influences. The chief budget officer must measure up to his new responsibilities. He must in many instances be an internationalist in his point of view.

After all there is nothing equal to ability as a motive force in business. It is of all-embracing importance and transcends all analysis. I believe that it was Alice in Wonderland who said that we ought to get into the habit of believing one impossible thing a day to be true. And so if we use that habit of questioning what seems to us to be an obvious certainty, we are likely to be led into the discovery that certain things which we thought were necessary or natural or that had to be, are after all not necessary or natural or could profitably be changed.

Production Cycle Most Important

It may seem heresy to appear here and not defend budgets to the last ditch as the *summum bonum* or greatest good: It is not so much that I do not believe in an intelligent forecast as it is that I do not believe in over-stressing its special utility. More important it seems to me is the consideration of the cycle of production or the determination of the period, be it a year or more or less during which we may produce a given quantity of goods or services at a profit. *The determination of the precise point at which under given conditions, profits cease and losses begin is the important objective.* In an era of declining prices, the profit is safeguarded only by an increase in volume or lowered costs. Modern production essentially involves a continual increase in capital in the form of machinery which in turn involves large additional charges for interest. This element in cost increases rapidly with every decline in production. Only recently I came into contact with one case where a prominent American industry had lost its markets in France and Czechoslovakia because of German competition and its markets in Australia and Japan because of British competition.

This is not an isolated case. I mention it merely to reinforce my main thesis which is, use a budget but do not get the notion that it is the only tool in the kit.

Has a Business Man Got Common Sense?

A business man is quite sure of it himself, often he is positive his competitor has none and the customers of both hope for the best or think the worst about each of them. When a business man doesn't allow enough depreciation in making up his costs and Profit and Loss Account, he may be giving away his plant or business to his customers and now know about it. When he makes out his income tax return he pays the government too much tax. Is this common sense?

A prudent business man knows perfectly well that no matter how carefully he keeps his machinery and equipment in repair, the day is coming when a machine has got to be junked either because a new and more efficient machine is available or because the present one has just naturally served its day and can't be kept going economically any longer. Instead of putting off the evil day when he has got to put up the cash to buy new equipment a good business man provides for it ahead of time by setting aside a fund, or a reserve as they call it, of so much each year. When the time comes the needed funds are then available in the business. If in the meanwhile funds have been distributed in dividends without making this provision it may, and probably will, be found that there is not enough working capital left available to buy new equipment when it is needed. There's no common sense in this. The answer is to provide for this thing they call Depreciation which has just been described in non-technical language.

Professor T. H. Sanders of the Graduate School of Business Administration of Harvard University was a speaker at the first meeting of the fall and winter season of the New York Chapter of the National Association of Cost Accountants on the evening of September 11.

The subject on which Prof. Sanders spoke was "Fixed Assets, Depreciation, Obsolescence, and Maintenance." The occasion was one of special interest for all business men. The meeting was held at the Machinery Club, 50 Church street, New York, and was the occasion for a considerable number of executives, professional accountants and others representing many different lines of industry to meet together.

Prof. Sanders' talk was delivered after the dinner and he ably demonstrated his wide knowledge of the subject both in a practical way from long years of experience and as a professor of accounting. The audience heard a talk given straight from the shoulder which they will not easily forget.

As the speaker said, this was an old subject, but judging by the everlasting interest in it, it is a subject which has by no means been exhausted, and will continue to be a matter of careful study. In this connection he reminded us that the Accountants Index contains some 330 pages of references on the one subject of depreciation, and in addition to this, a representative of the Internal Revenue Department once pointed out that as high as 12 per cent of the disputes on income tax matters were over the proper charges for depreciation.

May Be Viewed in Three Ways

Prof. Sanders said that depreciation could be viewed in either one of three ways: the exhaustion of the useful life of assets, or the exhaustion of the capital investment in fixed assets, or the apportionment of the capital investment over the useful life of fixed assets. Although accountants and business men take it for granted that a reasonable provision for depreciation should be made, yet on the one hand its far-reaching consequences and application are only understood after a great deal of experience with it, and on the other hand there is much dispute as to the amount of provision that should be made and the manner in which

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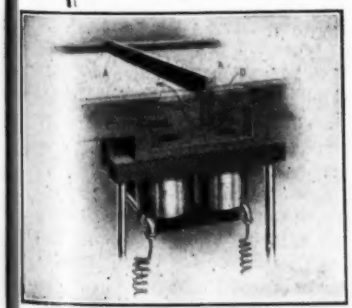

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it should be set up. These disputes arise for the most part out of confusion between what is desirable in the records as a matter of accounting policy, and what it is desirable *to do* about depreciation, maintenance, etc., as a matter of business policy. There is, of course, no conflict between accounting policy and business policy when they are both understood in their proper sphere, but it certainly is possible and reasonable, for example, for a man to make the accounting provision in the records on the basis of the original cost of assets, and yet as a matter of business policy he may desire to make reserves in the business which are adequate to replace the assets at their reproduction costs. Prof. Sanders emphasized the fact that so far as the accounting records are concerned, their function is to record the facts concerning business transactions.

Two Objects

There are two objects in the proper accounting for depreciation: (1) to obtain true operating costs, and (2) to state the facts for balance sheet purposes. The two views as to whether depreciation should be calculated on the original cost of fixed assets or on their replacement values, could be reconciled in the accounts by setting up the depreciation reserve based upon original cost, but that as a matter of conservative business policy net profits would not be made available for dividends until after a further reserve was provided out of surplus to take care of the difference between the amount reserved for depreciation based upon original cost and the higher figure needed to provide for the investment taken at replacement values. Public utilities, especially the railroads, were referred to in view of the Interstate Commerce Commission rulings on the subject of depreciation.

The policy followed in handling maintenance and repairs and the extent to which equipment is used, are two things which have an important bearing on the provision for depreciation. In some industries a plant operating 24 hours a day should allow higher reserves than one running only 8 hours. On the other hand, in certain cases some types of equipment are liable to depreciation just as heavily, if not more so, during times of idleness.

The place of depreciation on income tax returns was referred to since, as already stated, a very large percentage of the disputes between tax payers and the Internal Revenue Department arise from depreciation matters. The recent attempts of the Department of Revenue to standardize rates for depreciation in given industries was discussed. Mr. Grimes, a representative of the Internal Revenue Department, spoke on this subject at the last National Convention, and as he then stated, a certain leeway is permitted to individual tax payers in an industry where average rates of depreciation have been agreed upon.

Value of Plant Ledgers

Prof. Sanders discussed briefly the value of plant ledgers and said that in his opinion judgment should be used in their installation, keeping in mind the size of the plant. In all large plants they are necessary for many reasons, and often in the settlement of income tax returns. He thought that it is not necessary to figure depreciation individually on every item of equipment, such as the method followed in one plant he knew of. In this case they had some 60,000 cards covering individual pieces of equipment, and depreciation was figured on each item. Assets of similar life could be grouped and the calculations brought down to a reasonable number.

With regard to maintenance, he made a strong appeal for cooperation between the engineering staffs of the larger concerns with cost accountants. Through this cooperation, engineers can often point the way to the reduction of maintenance and repair charges, while the cost accountants can show in terms of cost the result of the policies followed.

Meetings Held Monthly

Meetings are held monthly by the National Association of Cost Accountants and they are very much worth attending by executives, accountants, cost accountants and others interested in the improvement of industrial conditions. The next meeting will be held on October 9 at the Builders Club, No. 2 Park avenue, New York City, when Professor Chas. Rietel of the University of Pittsburgh will speak on the subject of "How Executives Can Obtain the Fullest Benefit from Cost Data." Since Prof. Rietel is so widely known both in the accounting profession and in the business world, this meeting is of special interest. The New York Chapter is always glad to welcome guests on such occasions, and those interested may obtain further information by writing to the Secretary, Joseph D. Griffin, at the offices of the National Association of Cost Accountants at 25 West 43rd street, New York City.

To Aid Industries in New York

Albany, N. Y., September 17, 1928.—Pulp and paper manufacturers as well as other industries in Northern and Central New York, to the number of more than 1,000, are being circularized by the New York Development Association which is making an industrial survey of the territory in order to gain information that will be helpful in its program for aiding existing industries.

In its letter to manufacturers a questionnaire is included requesting what raw or manufactured materials are now being used which are purchased outside of Northern New York; the approximate amount and value of such materials and where purchased and what raw materials or by-products are now going to waste.

In a statement by George A. Lawyer, director of the Development Association, outlining the aims of the organization, he expressed the belief that many of the manufacturing plants are wasting by-products and other materials which possibly may be saved and utilized.

"We know that for years our paper mills daily have wasted enormous quantities of screenings of great value which now are being saved and used in the manufacture of insulating board at the new plant recently erected by the Carlisle interests at Oswego," he said. "The research we are conducting may uncover and save other materials to the distinct advantage of our people.

"We have already done much to enable our local manufacturers to bid more successfully for orders and produce a greater volume of goods through lowering of transportation costs. Our success in obtaining reduced rates on coal and upon the great quantity of articles taking the class rates together with the case now pending on paper rates should produce marked results in increasing orders for local mills."

The New York Development Association has a membership scattered over ten up-state counties and includes practically all of the important pulp and paper mills from Albany to the Canadian border.

Survey of Waste Paper Consumption

According to a survey of Waste Paper Consumption, made by the American Paper and Pulp Association, the paper industry of the United States consumed 68 million dollars worth of waste paper in 1926 and 66½ million dollars worth in 1927.

Of the total tonnage of waste paper consumed, mixed papers constituted 48 per cent; news, 24 per cent; No. 1 magazine stock, 6 per cent; kraft and manila, 1 per cent; and all other, 21 per cent.

There was a 3 per cent decrease in both the total value and total tonnage of waste paper consumed in 1927 as compared with 1926, while No. 1 magazine stock increased 4 per cent in tonnage and kraft and manila increased 15 per cent over 1926.

The American Paper and Pulp Association is distributing a complete six page report on the consumption of waste paper by grades and divisions of the paper industry, to the mills which cooperated with it in the preparation of this report, by sending in reports of their tonnage and values. This survey is an additional step on the part of the American Paper and Pulp Association to furnish data on the basic raw materials of the paper industry which have not heretofore been available.

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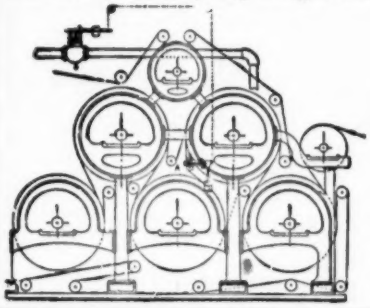

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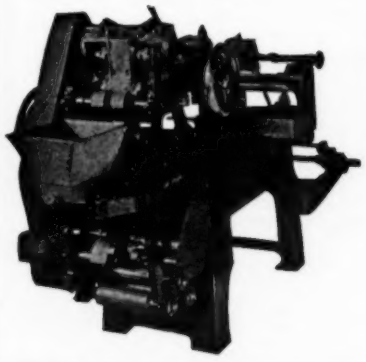
will do everything we claim for it and more. The test costs you nothing until you are satisfied. Many mills tried one and now have every machine equipped. Write for list of users and other information.

W. F. PICKLES **Buckland, Conn.**



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The Textile-Finishing Machinery Company
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Imports of Paper and Paper Stock

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING SEPTEMBER 15, 1928

SUMMARY

Cigarette paper	101 cs.
Wall paper	22 bls., 13 cs.
Paper hangings	12 bls., 14 cs.
News print	8,696 rolls, 33 bls.
Printing paper	45 rolls, 282 cs.
Wrapping paper	45 cs.
Colored paper	33 cs.
Filter paper	14 cs.
Drawing paper	55 cs.
Silk paper	5 cs.
Crepe paper	7 cs.
Writing paper	14 cs.
Envelopes	91 cs.
Copy paper	40 cs.
Decalcomania paper	57 cs.
Tissue paper	90 cs.
Baryta coated paper	198 cs.
Surface coated paper	85 cs.
Metal paper	55 cs.
Gold coated paper	4 cs.
Coated paper	32 cs.
Grease proof paper	16 cs.
Stencil paper	35 cs.
Photo paper	9 cs.
Texture paper	7 cs.
Straw board	130 rolls
Miscellaneous paper	140 cs.

CIGARETTE PAPER

The Surbrug Co., Sarcoxie, Havre, 20 cs.
Standard Products Corp., Rochambeau, Havre, 2 cs.
P. J. Schweitzer, Rochambeau, Havre, 11 cs.
Liggett & Myers Tobacco Co., Rochambeau, Havre, 25 cs.
Standard Products Corp., France, Havre, 40 cs.
British American Tobacco Co., France, Havre, 3 cs.

WALL PAPER

A. C. Dodman, Jr., Inc., Aquitania, Southampton, 4 bls.
F. A. Binder, Muenchen, Bremen, 5 bls.
F. I. Emmerich, Baltic, Liverpool, 3 bls.
F. J. Emmerich, New York, Hamburg, 6 bls.
American Exchange Irving Trust Co., New York, Hamburg, 13 cs.
Globe Shipping Co., New York, Hamburg, 4 bls.

PAPER HANGINGS

W. H. S. Lloyd & Co., Carmania, London, 5 cs., 8 bls.
Whiting & Patterson Co., Inc., Aquitania, Southampton, 8 cs.
A. C. Dodman, Jr., Inc., Baltic, Liverpool, 1 cs., 4 bls.

NEWS PRINT

Walker Goulard Plehn Co., Yorck, Bremen, 33 bls.
Parsons & Whittemore, Inc., Yorck, Bremen, 1,018 rolls.
A. S. Zabriskie, Muenchen, Bremen, 123 rolls.
Journal of Commerce, Muenchen, Bremen, 55 rolls.
Perkins Goodwin & Co., Muenchen, Bremen, 702 rolls.
Guaranty Trust Co., Stavangerfjord, Follum, 199 rolls.
Hudson Trading Co., Havo, Sundsvall, 98 rolls.
Clinton Paper Co., Humberarm, Corner Brook, 734 rolls.
Brooklyn Times, Humberarm, Corner Brook, 652 rolls.
N. Y. Telegram, Humberarm, Corner Brook, 4,604 rolls.
Washington Star, Humberarm, Corner Brook, 156 rolls.
Peekskill News, Humberarm, Corner Brook, 40 rolls.
International Paper Co., Humberarm, Corner Brook, 315 rolls.

PRINTING PAPER

C. Steiner, Ryndam, Rotterdam, 6 cs.
P. C. Zuhlke, Lapland, Antwerp, 20 cs.
W. J. Byrnes, Rochambeau, Havre, 100 cs.
E. Dietzgen & Co., New York, Hamburg, 13 rolls.
Keuffel & Esser Co., New York, Hamburg, 32 rolls.
Judson Freight F'd'g Co., Yorck, Bremen, 33 cs.
S. Bienfang, Yorck, Bremen, 23 cs.

WRAPPING PAPER

Steffens Jones Co., Ryndam, Rotterdam, 7 cs.
Nat'l Consumers Paper Co., Ryndam, Rotterdam, 9 cs.
Birn & Wachenheim, Ryndam, Rotterdam, 29 cs.

COLORED PAPER

S. Gilbert, Yorck, Bremen, 33 cs.

FILTER PAPER

H. Reeve Angel & Co., Inc., Carmania, London, 14 cs.

DRAWING PAPER

Keuffel & Esser Co., New York, Hamburg, 55 cs.

SILK PAPER

Whiting & Patterson Co., Inc., Ryndam, Rotterdam, 5 cs.

CREPE PAPER

J. Beckhard & Co., G. Washington, Bremen, 7 cs.

WRITING PAPER

J. E. Bernard & Co., Sarcoxie, Havre, 4 cs.
Perry Ryer & Co., Aquitania, Southampton, 3 cs.
B. Altman & Co., Aquitania, Southampton, 2 cs.
J. E. Bernard & Co., Aquitania, Southampton, 1 cs.
Stern Bros., Aquitania, Southampton, 4 cs.

ENVELOPES

J. Beckhard & Co., G. Washington, Bremen, 91 cs.

COPY PAPER

Whitfield Paper Wroks, Havana Maru, Kobe, 40 cs.

DECALCOMANIA PAPER

B. F. Drakenfeld & Co., Baltic, Liverpool, 12 cs. (duplex); 14 cs. (simplex).
L. A. Consmiller, Yorck, Bremen, 9 cs.
L. A. Consmiller, G. Washington, Bremen, 22 cs.

TISSUE PAPER

B. F. Drakenfeld & Co., Baltic, Liverpool, 3 cs.
Old Master Paper & Pulp Corp., New York, Hamburg, 87 cs.

BARYTA COATED PAPER

J. H. Schroeder Banking Corp., Republic, Bremen, 19 cs.
Globe Shipping Co., Republic, Bremen, 43 cs.
Globe Shipping Co., Yorck, Bremen, 75 cs.
J. H. Schroeder Banking Corp., Yorck, Bremen, 61 cs.

SURFACE COATED PAPER

Globe Shipping Co., Ryndam, Rotterdam, 9 cs.
P. C. Zuhlke, Lapland, Antwerp, 70 cs.
Globe Shipping Co., New York, Hamburg, 6 cs.

METAL PAPER

Hensel Bruckman & Lorbacher, Muenchen, Bremen, 8 cs.
Hensel, Bruckman & Lorbacher, G. Washington, Bremen, 47 cs.

GOLD COATED PAPER

Richard Shipping Co., Muenchen, Bremen, 4 cs.

COATED PAPER

Globe Shipping Co., New York, Hamburg, 32 cs.

GREASE PROOF PAPER

Central Union Trust Co., New York, Hamburg, 16 cs.

STENCIL PAPER AND INK

Arlac Dry Stencil Co., New York, Hamburg, 35 cs.

PHOTO PAPER

J. H. Schroeder Banking Corp., G. Washington, Bremen, 9 cs.

TEXTURE PAPER

B. F. Drakenfeld & Co., Baltic, Liverpool, 7 cs.

STRAW BOARD

Perkins Goodwin & Co., Ryndam, Rotterdam, 130 rolls.

MISCELLANEOUS PAPER

Globe Shipping Co., Ryndam, Rotterdam, 36 cs.
P. C. Zuhlke, Ryndam, Rotterdam, 7 cs.
P. H. Petry & Co., Ryndam, Rotterdam, 6 cs.
Schoeller Hoersch Schmidt Corp., Ryndam, Rotterdam, 25 cs.
G. W. Sheldon & Co., American Farmer, London, 2 cs.
Lisk Bros., Havana Maru, Kobe, 2 cs.
Distinctive Writing Paper Co., Rochambeau, Havre, 4 cs.
Coenca Morrison & Co., Rochambeau, Havre, 10 cs.
Guibout freres, France, Havre, 12 cs.
P. H. Petry & Co., France, Havre, 4 cs.
McKesson & Robbins, France, Havre, 2 cs.
Keller Dorian Paper Co., France, Havre, 23 cs.
Globe Shipping Co., Binnendyk, Rotterdam, 27 cs.

RAGS, BAGGINGS, ETC.

Brown Bros. & Co., Minnesota, London, 124 bls. bagging; 44 bls. rags.
J. Rosenberg, Ryndam, Rotterdam, 157 bls. bagging.
Darmstadt Scott & Courtney, Ryndam, Rotterdam, 50 bls. new cuttings.
Castle & Overton, Inc., Anaconda, Rotterdam, 119 bls. rags.
Bank of The Manhattan Co., Anaconda, Rotterdam, 319 bls. rags.
W. Loewenthal & Co., Anaconda, Rotterdam, 16 bls. rags.
Union Bank & Trust Co., Hellen, Barcelona, 86 bls. rags.
Guaranty Trust Co., Livenza, Leghorn, 205 bls. rags.
Bank of The Manhattan Co., Livenza, Naples, 135 bls. rags.
Jaffe Products Co., Primero, Havana, 58 bls. rags.
W. Schall & Co., Carmania, London, 76 bls. rags.
C. B. Richard & Co., Tergestea, Trieste, 131 bls. rags.
A. W. Fenton, Inc., Tergestea, Trieste, 114 bls. rags.
Castle & Overton, Inc., Sarcoxie, Havre, 187 bls. rags; 56 bls. bagging.
The Barrett Co., Sarcoxie, Havre, 78 bls. rags.
Philadelphia Nat'l Bank, Muenchen, Bremen, 69 bls. rags.
Equitable Trust Co., Caledonia, Glasgow, 59 bls. rags.
C. R. Spence & Co., East Side, Dublin, 101 bls. rags.
The Barrett Co., Caucasier, Antwerp, 270 bls. rags.
American Over-Ocean Corp., Havana Maru, Kobe, 62 bls. rags.
Kidder Peabody Accept. Corp., Fred. VIII, Copenhagen, 172 bls. bagging.
Star Woolen Co., New York, Hamburg, 16 bls. rags.
E. J. Keller Co., Inc., Saco, ——, 200 bls. flax waste.
Darmstadt Scott & Courtney, Saco, Antwerp, 10 bls. rags.
Star Woolen Co., Saco, Antwerp, 82 bls. rags.
Guaranty Trust Co., Cabo Espartel, Leghorn, 62 bls. rags.
Sterling Mill Supply Co., Cabo Espartel, Barcelona, 111 bls. rags.
S. Birkenstein & Son, Inc., Cabo Espartel, Barcelona, 284 bls. rags.
Castle & Overton, Inc., Cabo Espartel, Barcelona, 64 bls. rags.
Bank of The Manhattan Co., Cabo Espartel, Malaga, 42 bls. rags; 34 bls jute waste.
American Exchange Irving Trust Co., Liberty Land, Genoa, 71 bls. rags.
Banco Com'l Italiane Trust Co., Liberty Land, Leghorn, 36 bls. rags.
Guaranty Trust Co., Liberty Land, Leghorn, 19 bls. rags.
Philadelphia Nat'l Bank, Yorck, Bremen, 46 bls. rags.
E. J. Keller Co., Inc., Sinaia, ——, 313 bls. rags.
Interstate Trust Co., Sinaia, Alexandria, 100 bls. rags.
Bank of The Manhattan Co., Sinaia, Constantinople, 267 bls. rags.
W. Schall & Co., G. Washington, Bremen, 99 bls. bagging.
S. Birkenstein & Son, Inc., Cabo Santa Maria, Bilbao, 269 bls. rags.

OLD ROPE

Swift Corp., Ryndam, Rotterdam, 72 bls.
Brown Bros. & Co., Ryndam, Rotterdam, 26 coils, 21 bls.
Brown Bros. & Co., Lapland, Antwerp, 50 rolls.
Brown Bros. & Co., Sarcoxie, Havre, 111 bls.
Brown Bros. & Co., East Side, Cardiff, 78 coils.
Brown Bros. & Co., New York, Hamburg, 34 coils.
Banco Com'l Italiane Trust Co., Liberty Land, Leghorn, 211 coils.

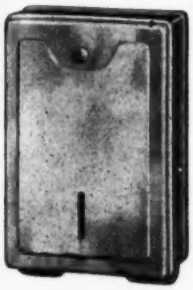
CASEIN

Chemical National Bank, Primero, B. Aires, 1,251 bags, 75,060 ks.
T. M. Duche & Sons, Primero, B. Aires, 1,251 bags, 75,060 ks.
Equitable Trust Co., Rochambeau, Havre, 250 bags.
Equitable Trust Co., New York, Hamburg, 211 bags, 8,100 ks.
Chemical National Bank, Phidias, B. Aires, 667 bags.
National City Bank, Primero, B. Aires, 417 bags, 25,020 ks.

WOOD PULP

Polaris Shipping Co., C. Gerhard, Sonora, 1,020 cords pulp.
Atterbury Bros., Inc., Stavangerfjord, Oslo, 750 bls. wood pulp.
Chase National Bank, Stavangerfjord, Follum, 1,400 bls. wood pulp.
Castle & Overton, Inc., New York, Hamburg, 2,411 bls. wood pulp, 361 tons.
Chemical National Bank, New York, Hamburg, 254 bls. sulphite, 51 tons.
Bulkley Dunton & Co., Havo, ——, 625 bls. wood pulp.
Pagel Horton & Co., Inc., Havo, Fefle, 500 bls. wood pulp.
Price & Pierce, Ltd., Havo, Wallvik, 600 bls. wood pulp.
Johanson Wales & Sparre, Inc., Havo, Sundsvall, 275 bls. sulphite, 55 tons.
Perkins Goodwin & Co., Havo, Sundsvall, 3 bls. sulphite.
Castle & Overton, Inc., Havo, Sundsvall, 150 bls. sulphite, 25 tons.
M. Gottesman & Co., Inc., Havo, Sundsvall, 475 bls. sulphite, 96 tons.

(Continued on page 72)



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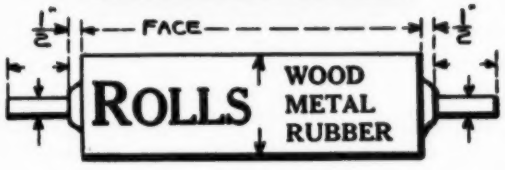

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NEW CUTTINGS

THE LESHNER PAPER STOCK CO.

INCORPORATED

HAMILTON, OHIO.
BRANCH—CLEVELAND, OHIO

Imports of Paper and Paper Stock

(*Continued from page 70*)

Chemical National Bank, Havo, Iggesund, 650 bls. sulphite, 130 tons.
M. Gottesman & Co., Inc., Havo, Iggesund, 750 bls. sulphate, 150 tons.
Bulkley Dunton & Co., Havo, ——, 2,225 bls. wood pulp, 445 tons.
Scandinavian Pulp Agency, Inc., Stockholm, Gothenburg, 1,524 bls. kraft pulp.
Price & Pierce, Ltd., Stockholm, Gothenburg, 500 bls. wood pulp.

WOOD PULP BOARDS

C. K. MacAlpine & Co., Stockholm, Gothenburg, 15 bls.

BALTIMORE IMPORTS

WEEK ENDING SEPTEMBER 15, 1928

S. Shapiro & Sons, Sarcoxie, Havre, 49 bls. rags.
Congoleum Nairn Co., Sarcoxie, Havre, 624 bls. rags; 284 bls. bagging.
Congoleum Nairn Co., Sarcoxie, Dunkirk, 744 bls. rags.
S. Shapiro & Sons, Sarcoxie, Dunkirk, 146 bls. rags.
Katzenstein & Keene, Inc., Sarcoxie, Dunkirk, 146 bls. rags.
Price & Pierce, Ltd., Havo, Ohrviken, 1,200 bls. wood pulp, 203 tons.
M. Gottesman & Co., Inc., Havo, Iggesund, 1,275 bls. sulphite, 255 tons.
Bulkley Dunton & Co., Havo, ——, 350 bls. wood pulp, 70 tons.
Price & Pierce, Ltd., Havo, Wallvik, 9,125 bls. wood pulp, 1,525 tons.
Congoleum Nairn Co., Liberty Land, Leghorn, 91 bls. rags.
Congoleum Nairn Co., Liberty Land, Naples, 113 bls. rags.
Castle & Overton, Inc., Binnendyk, Rotterdam, 540 bls. wood pulp.
National City Bank, Binnendyk, Rotterdam, 255 bls. rags; 230 bls. bagging.
Baltimore Trust Co., Binnendyk, Rotterdam, 38 bls. rags.
E. J. Keller Co., Inc., Binnendyk, ——, 300 bls. wood pulp.

NORFOLK IMPORTS

WEEK ENDING SEPTEMBER 15, 1928

Knoxville News, Humberarm, Corner Brook, 1,095 rolls news print.
E. D. J. Luning, Binnendyk, Rotterdam, 970 cs. cigarette paper.
N. Y. Trust Co., Binnendyk, Rotterdam, 279 bls. rags.

NEWPORT NEWS IMPORTS.

WEEK ENDING SEPTEMBER 15, 1928

Norfolk Times, Humberarm, Corner Brook, 1,165 rolls news print.
Norfolk Leader, Humberarm, Corner Brook, 1,717 rolls new spint.
Castle & Overton, Inc., Binnendyk, Rotterdam, 720 bls. wood pulp.

PHILADELPHIA IMPORTS

WEEK ENDING SEPTEMBER 15, 1928

E. J. Keller Co., Inc., Anaconda, Rotterdam, 597 bls. rags; 153 bls. bagging.
Brown Bros. & Co., Anaconda, Rotterdam, 69 bls. old carpets.
Leipheimer Missimer Co., Anaconda, Rotterdam, 47 bls. rags.
S. Birkenstein & Sons, Anaconda, Rotterdam, 240 bls. rags.
E. J. Keller Co., Inc., Livenza, ——, 162 bls. rags.
E. J. Keller Co., Inc., Sarcoxie, ——, 44 bls. rags.
V. Galaup, Sarcoxie, Havre, 82 bls. rags.
S. Birkenstein & Sons, Sarcoxie, Havre, 31 bls. string waste.
S. Birkenstein & Sons, Sarcoxie, Havre, 31 bls. old rope.
Castle & Overton, Inc., Sarcoxie, Havre, 598 bls. rags.
G. W. Millar & Co., Sarcoxie, Dunkirk, 126 bls. rags.
S. Birkenstein & Son, Sarcoxie, Dunkirk, 50 bls. rags.
Fidelity Trust Co., Saco, Antwerp, 45 bls. rags.
G. W. Millar & Co., Saco, Antwerp, 153 bls. rags.
W. L. Loeser & Co., Saco, Antwerp, 90 bls rags.
Castle & Overton, Inc., Saco, Antwerp, 575 bls. rags.
Robert Blank, Saco, Antwerp, 200 bls. rags.
Katzenstein & Keene, Inc., Saco, Antwerp, 31 lbs. rags.
Equitable Trust Co., Saco, Antwerp, 49 bls. rags.
Leipheimer Missimer & Co., Saco, Antwerp, 19 bls. rags.
Price & Pierce, Ltd., Havo, Ohrviken, 4,500 bls. wood pulp, 762 tons.
G. W. Millar & Co., Cabo Espartel, Marseilles, 149 bls. rags.
E. J. Keller Co., Inc., Cabo Espartel, ——, 131 bls. rags.
R. Canovai & Son, Liberty Land, Naples, 64 bls. rags.
E. J. Keller Co., Inc., Binnendyk, ——, 99 bls. rags.
Katzenstein & Keene, Inc., Binnendyk, Rotterdam, 163 bls. rags.
Fidelity Trust Co., Binnendyk, Rotterdam, 192 bls. rags.
Castle & Overton, Inc., Binnendyk, Rotterdam, 360 bls. wood pulp.
S. E. Ingber, Binnendyk, Rotterdam, 40 bls. rags.
Paper House of Penna., Binnendyk, Rotterdam, 68 cs. printing paper.
Chemical National Bank, Binnendyk, Rotterdam, 93 bls. rags.
G. W. Millar & Co., Binnendyk, Rotterdam, 104 bls. rags.

BOSTON IMPORTS

WEEK ENDING SEPTEMBER 15, 1928

Bank of The Manhattan Co., Anaconda, Rotterdam, 174 bls. rags.
C. H. Powell & Co., Anaconda, Rotterdam, 256 rolls straw board.
G. W. Millar & Co., Saco, Antwerp, 102 bls. rags.
National Shawmut Bank, Saco, Antwerp, 128 bls. rags.
International By-Products Corp., Binnendyk, Rotterdam, 345 bls. picker waste.
E. Butterworth & Co., Inc., Binnendyk, Rotterdam, 101 bags picker waste.
J. E. Bernard & Co., Binnendyk, Rotterdam, 4 cs. writing paper.
Equitable Trust Co., Binnendyk, Rotterdam, 42 bls. rags.
W. A. Feinberg & Son, Binnendyk, Rotterdam, 117 bls. rags.
Bendix Paper Co., Binnendyk, Rotterdam, 11 cs. wood pulp wadding.
Castle & Overton, Inc., Binnendyk, Rotterdam, 1,677 bls. wood pulp.
C. H. Powell & Co., Binnendyk, Rotterdam, 173 rolls straw board.
Kidder Peabody Accep. Corp., Binnendyk, Rotterdam, 53 coils old rope.
Chemical National Bank, Binnendyk, Rotterdam, 83 bls. rags.

To Hold Trade Practice Conference

WASHINGTON, D. C., September 19, 1928.—The Federal Trade Commission will hold a trade practice conference with members of the paper board industry to consider unfair commercial practices said to exist in that trade. A date has not been set but the meeting will be held in Chicago some time in October. Commissioner Abram F. Myers has been named to preside at the conference.

Members of the industry have signified to the commission their desire to find ways to eliminate such practices as price discrimination, inducing breach of contract, misbranding, secret rebates, and misrepresentation. These are held by leaders in the industry to constitute unfair methods of competition, to result in unnecessary waste, and to be contrary to the best interests of the purchasing public as well as of the industry.

The industry includes manufacturers and distributors of paper board, corrugated and solid fiber boxes, as well as folding paper boxes or cartons. The Paperboard Industries Association, which asked for the trade practice conference, represents in membership about eighty per cent of the tonnage produced in this business. There are 137 companies in the association, of which fifty-five are classified as the container group, thirty-five as the paper board group, nineteen as the folding box group, while the remainder are listed as manufacturing and distributing different combinations of paper board goods, containers and folding boxes. There are said to be about 165 non-member companies.

Bids for Government Paper

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., September 19, 1928.—The Government Printing Office has received the following bids for 100,000 9x3¼ pink and blue sulphite manila shipping tags: Dennison Manufacturing Company, at $3.31 per M; Denney Tag Company, $2.36; International Tag Company, $2.80; R. P. Andrews Paper Company, $2.32; and T. A. Cantwell & Co., $2.35.

The following bids have also been received for 200,000 pounds manila tabulating cards: Barton, Duer & Koch Paper Company, at 7.42 cents per pound; and Mathers-Lamm Paper Company, 8.4 cents.

For 100,000 pounds colored, the same: Barton, Duer & Koch Company, 7.99 cents per pound; and Mathers-Lamm Paper Company, at 8.9 cents.

Advance Bag Co. Asks Reasonable Rates

WASHINGTON, D. C., September 19, 1928.—The Advance Bag and Paper Company, Inc., of Boston, has filed a complaint with the Interstate Commerce Commission against the Baltimore & Ohio Railroad. The paper firm is asking the Commission to prescribe reasonable rates on printing, wrapping and other papers from points of origin in Ohio to destinations in Iowa, Missouri, Nebraska, Kansas, Colorado and South Dakota, except points on the west bank of the Mississippi River in Missouri and Iowa and reparation is claimed.

For reliable running and average long life

LINDSAY FOURDRINIER WIRES

are unsurpassed

We make them for the largest and fastest machines.

Cylinder Wires All Sizes

The Lindsay Wire Weaving Co.

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As every golfer knows par is a standard of excellence. It is a good term to apply to Heller & Merz dyestuffs. They are par dyestuffs because they represent the excellence which exacting users demand.

Heller & Merz service is just as good. Ask us about both.

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ONE great organization—a specialist in paper mill engineering and construction—designs, builds, rebuilds, reports, appraises, for many of the most important concerns in the paper industry. Plans, price, construction work, delivery date, owner's satisfaction, all guaranteed.

Ferguson customers include:

Hinde & Dauch Co.
A. P. W. Paper Co.
Mead Pulp and Paper Co.
Chillicothe Paper Co.
Warren Mfg. Co.
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Bennington Wax Paper Company
Oswego Falls Corp.
Fairfield Paper Co.

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ENGINEERS

Paper Mill Stocks and Bonds

Quoted by Taylor & White, 45 Wall street, New York City, to whom all inquiry for quotations on these or any other Securities is referred.

BONDS	BID	ASKED
Abitibi Power & Paper 5s, 1943	90	91
Abitibi Power & Paper 6s, serially to 1934	100	102
American Writing Paper 6s, 1947	81	87
Bastrop Pulp & Paper 6½s, 1940	103	105½
Bedford Pulp & Paper 6½s, 1942	97	100
Beigo-Canadian Paper 6s, 1943	100	103
British-Columbia Pulp & Paper 6s, 1950	89	92
Brown Paper Mills Serial 6s, 1941	97	100
Brown Company 5½s, 1946	98	101
Bryant Paper 6s, 1942	98	101½
Canadian Paper Board 7s, 19337	97	99½
Cape Breton Pulp & Paper 6s, 1932	103	...
Celotex Company 6s, 1929	95	99
Celotex Company 6½s, 1939	100	102
Celotex Company of Chicago, Debenture 6s, 1936	95	98
Central Paper Company Serial 6½s, 1942	86	89
Central Paper 7s, 1934	78	...
Champion Coated Paper Serial 6½s, 1934	100	...
Champion Coated Fibre Notes 6s, 1941	100	102
Champion Fibre Notes 6s, 1941	100	102
Champion Fibre Notes 8s, 1930	95	...
Champion Paper Corp. 6s, 1945	95	98
Container Corp. of America Debenture 6s, 1936, ex-warrants	101	104
Continental Paper Products 6½s, 1943	90	99
Cornell Wood Products 7½s, 1937	103	...
Crown Willamette 6s, 1951	101	102
Dells Paper & Pulp Serial 6s, 1938	95	98
Dixon Board Mills Serial 6s, 1942	80	...
Donnaconna Paper 5½s, 1948	95	98
Eastern Manufacturing Co. 7s, 1938	97	100
Escanaba Paper Serial 6s, 1939	98	100
Escanaba Paper 6½s, 1935	96	99
Filer Fibre Serial 7s, 1935	90	95
Fort Irange Paper 7s, 1942	101	...
Fort William Paper 6s, 1946	100	104
Fraser Company 6s, 1950	103	105
Hammermill Paper Serial 6s, 1939	100	...
Hawley Pulp & Lumber 6s, 1946	96	...
Hawthorne Paper Company 6s, 1937	80	...
Hoberg Paper & Fibre 7s, 1937	94	97
Industrial Fibre Corp. Debenture 8s, 1933	100	...
International Paper 6s, 1955	102	103
International Paper 5s, 1947	98	100
Itasca Paper & Prairie River Power Serial 5½s, 1938	99½	...
Itasca Paper & Prairie River Power Serial 6s, 1938	99	...
Jessup & Moore First 6s, 1945	83	90
Kalamazoo Vegetable Parchment 6s, 1938	99	101
Lake Superior Paper 6s, 1941	105	108
Marathon Paper Mills Serial 5½s, 1942	99	101
Marinette & Menominee 7½s, 1936	103	105
Mead Pulp & Paper 5% Notes Serially, 1937	95	100
Mead Fibre 7s, 1937	97	101
Minnesota Ontario Paper Serial 6s, 1945	97½	100
Murray Bay Paper Serial 6½s, 1947	102	105
Munising Paper Serial 6s, 1936	98	...
Nekoosa Edwards Paper 6s, 1928-42	96	...
Ontario Pulp & Paper 6s, 1931	108½	110½
Orono Pulp & Paper 6s, 1943	99	...
Otono Pulp & Paper 5s, 1941	96½	...
Oswegatchie Paper Serial 6s, 1932	95	100
Oswego Falls Corp. 6s, 1941	99	102
Parker-Young Company 6½s, 1944	98	100
Paterson Parchment Paper 6s, 1938	101	103
Penobscot Chemical Fibre 6s, 1942	102	105
Port Alfred Pulp & Paper 5½s, 1947	98	100
Price Brothers 6s, 1943	105	...
Provincial Paper 5½s, 1947	98½	...
Queen City Paper 7s, 1933	98	...
River Raisin Paper 6s, 1936	98	100
Riordan Pulp & Paper 6s, 1942	102	104
Rolland Paper 6s, 1937	99	101
St. Croix Paper Serial 5s, 1937	99	...
St. Helen Pulp & Paper 6½s, 1931	99	102
St. Maurice Valley Corp. 6s, 1945	101	104
St. Maurice Valley Corp. 5½s, 1947	98½	100½
St. Regis Paper of Canada 6s,, 1931	100	101½
St. Regis Paper of Canada 6½s, 1934	100	102
Smith (Howard) Paper Mills 7s, 1941	104	106
Spanish River Pulp & Paper 6s, 1931	108	110
Stevens-Thompson Paper 6s, 1942	94	96
Taggart Brothers 6s, 1944	95	100
Tait Paper & Color Industries 6s, 1934	88	92
Ticonderoga Pulp & Paper 5s, 1930	94	...
Ticonderoga Pulp & Paper 6s, 1940	100	102
Tomahawk Kraft Paper 6s, 1938	98	...
Tomahawk Pulp Paper 7s, 1932	99	...
Tonawanda Paper 5½s, Series 1941	99	102
Union Bag & Paper Power 6s, 1932	98	100
United Wall Paper Factories 6s, 1947	96	99
Warren (S. D.) Company 6s, 1945	103	105
Watab Paper 6½s, 1942	101	103½
Waterway Paper Products 6s, 1931	100	101½
Wayagamack Pulp & Paper 6s, 1951	103	105
Westfield River Paper Serial 7s, 1943	89	93
Whitmer-Parson Pulp & Lumber 8s, 1938	20	25
Whitaker Paper 7s, 1942	108	110

STOCKS	BID	ASKED
American Box Board, Pfd.	9¼	10¼
American Box Board, Com.	9¼	10¼
Am. Tissue Mills, 7% Pfd.	90	93
British Columbia P. & P. Pfd.	65	75
Brompton Pulp & Paper, 8% Pfd.	100	...
Champion Fibre, 7% Pfd.	108	110
Diem & Wing, 7% Pfd.	92	97
Eastern Mfg. Co. 1st Pfd.	55	...
Great Northern Paper, Com.	75	78
Hammermill Paper, new 6% Pfd.	100	...
Hinde & Dauch, Com.	125	None Off.
Hinde & Dauch, 6% Pfd.	102	None Off.
Holyoke Card & Paper	160	None Off.
Marathon Paper Mills, Com.	150	...
Mengel Co., Pfd.	102	104
Midwest Box Co., 8% Pfd.	98	102
Midwest Box Co., 6% Pfd.	95	99
Louis De Jonge Co., 7% Pfd.	94	97
Oxford Papers, Com.	195	...
Oxford Paper Co., Pfd.	108	111
Penobscot Chemical Fibre, Com.	80	...
Richardson Co., Com.	170	...
Rubberoid	95	101
Sabin Robbins Paper Co., 8% Pfd.	105	110
St. Croix Paper	155	...
St. Regis Paper Co., 7% Cum. Pfd.	105	108
Westfield River Paper Co., 1st Pfd.	Wanted	None Off.
West Virginia Pulp and Paper Company	55	57
West Virginia Pulp and Paper, Pfd.	100	103
Whittaker Paper, 7% Cum. Pfd.	105	None Off.

NEWS PRINT INDUSTRY EXPANDS

(*Continued from page 21*)

according to a statement issued by W. K. Tibert, director of vocational education for the province. The new course, which will be opened by the vocational division of the Department of Education as soon as a suitable instructor is obtained, will be held in the Composite school and will accommodate a maximum of thirty students and will be eight months in duration.

The pulp and paper school will be similar in scope to that conducted by the Quebec Department of Lands and Forests at Three Rivers. There are several now in operation in the United States. The Edmundston school, although an outgrowth of the night school course there, is distinct from it in every way. The proposition has received full support from the Fraser Companies, Ltd.

New Zealand Paper Market

The New Zealand paper market, according to Paul Sykes, the assistant trade commissioner for Canada in Auckland, has long been characterized by its consistent and predominating consumption of a Canadian-made product. The market for all other papers, however, while of no small value to Canadian exporters, is one which for many years has shown decided preference for papers of United Kingdom manufacture. An important exception to this rule is evident in the case of wrapping papers which are largely of Canadian origin. The net result is a fairly even division of some 95 per cent of the total import trade in all types of paper between Canadian and United Kingdom mills, the larger supplies of Canadian news print being balanced by a preponderance of English book and writing papers. Almost £200,000 worth of these papers is imported annually into New Zealand, chiefly as raw material for job printing establishments. While it is generally accepted that this market for Canadian paper may be somewhat limited by specific requirements in quality, Mr. Sykes says, the impression is also prevalent that a more careful investigation of the price situation in an effort to meet present competition might well result in the establishment of a larger volume of business than is now being obtained. The current annual demands of the New Zealand market for printing, wrapping and writing papers, exclusive of news print, amount to £475,000, slightly more than the total value of news print imports in recent years.

Writing paper in large sheets, from the point of view of import values of individual types of paper, is the third most important variety brought into New Zealand, the value of all purchases from overseas manufacturers having recently averaged £100,000 per year. As in the case of the finer printing papers, the market is featured by a consistently heavy consumption of the product of United Kingdom mills, but it is of interest to note an increase in the proportion of Canadian supplies included in total import values from less than 5 per cent in 1924 to over 18 per cent in 1927.

The important growth in this market for one of the newer products of the Canadian paper industry is clearly shown by the above figures. It has been based on the introduction of higher grade papers as well as on an increased sale of the medium grades at prices which have compared favorably with those of older established lines. The sale of a wider range of such papers from Canadian mills eventually lead to further increases in the proportion of the total consumption which they now represent.

BROWN COMPANY'S ALPHA GRADES

of Purified Cellulose Fibre representing some of the valuable results of our many years of research in cellulose chemistry.

SUPER ALPHA

for strength in Tear, Fold and Mullen. Super Alpha equals the higher grades of rags in the manufacture of fine papers.

EASY-BEATING ALPHA

This is a grade developed for mills of limited beating capacity. While not giving results equal to Super Alpha, it produces wonderful paper on short beating.

REGULAR ALPHA

This is a grade midway between Super and Easy-Beating.

Use ALPHA for Quality

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THE BABCOCK & WILCOX COMPANY — STEAM

Water Tube Boilers Steam Superheaters
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DETROIT	Ford Building
HOUSTON, TEXAS	Electric Building
LOS ANGELES	Central Building
NEW ORLEANS	344 Camp Street
PHILADELPHIA	Packard Building
PHOENIX, ARIZ.	Heard Building
PITTSBURGH	Farmers Deposit Bank Building
PORTLAND, ORE.	Failing Building
SALT LAKE CITY	Kearns Building
SAN FRANCISCO	Sheldon Building
SEATTLE	L. C. Smith Building
HONOLULU, T. H.	Castle & Cooke Building
HAVANA, CUBA	Calle de Aguiar 104
SAN JUAN, P. R.	Recinto Sur 51

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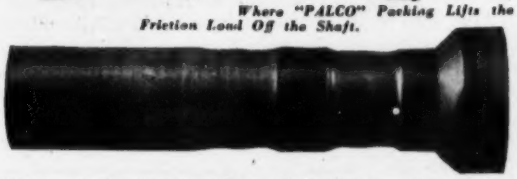

Photograph of a Centrifugal Pump Shaft badly worn by working against flax packing which did not carry sufficient lubricant to prevent friction.

STYLE C PACKING

For pumps handling caustic soda and similar chemicals. Its lubricant can be relied upon to resist the cutting action of these chemicals, and to keep the pump shaft so perfectly lubricated as to avoid friction. To prove our claims let us send you a free working sample to test under your own conditions.

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New York Market Review

Office of the PAPER TRADE JOURNAL,
Wednesday, September 19, 1928.

Conditions continue to improve in the local paper market, and the outlook for the closing months of the year is promising. Demand for the various grades is expanding. Prices rule steady to firm and reports of concessions are infrequent. Sales forces of the leading paper organizations are booking a good volume of orders and are mostly optimistic.

News print is in excellent request locally. It is interesting to note that the New York *Herald Tribune* published the largest newspaper in its history last Sunday. The 240 pages of the issue were made possible by the most comprehensive news reports and feature articles and the largest volume of advertising which ever appeared in the newspaper. There were about 800 columns of reading matter and illustrations and 764 columns of advertisements in the paper.

Paper board production is being maintained in excellent volume. Consumption is well up to average for the season. Prices remain steady and unchanged. The fine paper market is in a sound position, with prices generally holding to schedule. Some improvement was noticed in the coarse paper market and wrapping paper is exhibiting a strong undertone.

Mechanical Pulp

Most of the business transacted in the ground wood market was along routine lines. Contract withdrawals of mechanical pulp are moving in normal volume for the season. Stocks on hand of both imported and domestic ground wood are about sufficient to take care of immediate demands. Quotations are practically unchanged.

Chemical Pulp

Steadiness prevails in the chemical pulp market. Both imported and domestic bleached sulphite are exhibiting a strong tendency and offerings are decidedly limited. Kraft pulp is beginning to attract more attention. Demand for unbleached sulphite is also improving. Prices of the various grades of chemical pulp are unaltered.

Old Rope and Bagging

Demand for old rope is persistent and prices are somewhat firmer. Foreign manila rope is now quoted at from 3.35 to 3.65 while the domestic product is selling at from 3.25 to 4.00. Business in the bagging market is fairly active. Roofing bagging is in good request. Scrap bagging and gunny bagging are rather quiet. Prices remain unchanged.

Rags

The domestic rag market is gradually improving. Cotton cuttings are in excellent request and roofing rags are moving at a steady pace. The mixed rag market is rather quiet. No radical changes have transpired in the imported rag market. Prices abroad are still high, influenced by heavy home consumption.

Waste Paper

Paper mill interest in the various grades of paper stock is expanding. The lower grades, in particular, are exhibiting great strength, due to the increased activity of the board mills. No. 1 white news is now quoted at from 1.75 to 1.80 and strictly folded at from .70 to .80. Soft white shavings are stronger and are now selling at from 2.35 to 2.50.

Twine

Trading in the twine market during the past week was mostly along routine lines. While business is rather quiet at present, livelier conditions are anticipated from now on to the end of the year, in conjunction with the usual seasonal increased demand for wrapping paper. Prices are holding to schedule, in most instances.

Swedish Exports of Pulp and Paper

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., September 19, 1928.—Statistics covering Swedish exports of pulp and paper for the first six months of this year indicate that the effects of the labor conflict have been overcome, insofar as the volume of shipments are concerned.

With the exception of mechanical ground wood shipments, which Swedish mills have voluntarily restricted, and news print shipments, exports during the first half of this year exceed those of the corresponding period of last year, the largest increases being registered in shipments of chemical pulp and boards. Shipments of the former were 20 per cent and of the latter 24 per cent greater than during the first half of last year. News print shipments, which represent somewhat more than half of the total shipments, decreased by 2 per cent, but increases in exports of other printing and writing papers and wrapping papers were sufficient to bring total paper shipments 5 per cent above those for the first half of last year.

Manning Association Has Outing

[FROM OUR REGULAR CORRESPONDENT]

TROY, N. Y., September 10, 1928.—The fourth annual outing of the Manning Welfare Association was held Labor Day with more than 600 employees and officials of the company in attendance. The affair was a success in every way being favored by good weather. All three mills of the company, the Mt. Ida mill in this city, the Green Island mill and the Behr-Manning plant in Watervliet, had large delegations at the outing. Andrew White was master of ceremonies. The program included a baseball game between Watervliet and Green Island plants which was won by the latter, and numerous other sports events between representatives of the three plants.

The committee in charge of the affair included Henry Nelson, of the Watervliet plant, Joe Walkinshaw, of the Green Island factory, and William Shackett of the Mt. Ida mill. The Manning syncopators and entertainers furnished the music.

International Gets Envelope Contract

WASHINGTON, D. C., September 18, 1928.—The International Envelope Corporation, a subsidiary of the International Paper Company, of New York, today obtained the contract for furnishing the Postoffice Department with 12,800,000,000 stamped envelopes and newspaper wrappers for the four-year period beginning Jan. 1, 1929. The bid was $13,209,793.

Since 1907, with the exception of a few months, the contract has been held by the Middle West Supply Company, of Dayton, Ohio. This company bid $13,314,954 and the United States Paper Goods Company of Cincinnati, the only other bidder, made a $14,434,778 proposal.

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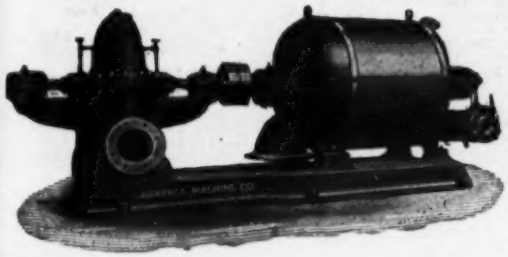

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Thousands of installations and the successful performance of our pumps should be sufficient proof of our ability to handle your pumping problems. Our engineering force is at your command.

Have only Lawrence Pumps, manufactured by the

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361 Market St. Lawrence, Mass.

Acid water troublesome in your mill?

First of all you use Quartz Quality silicate in the beater to make a better sheet of paper. But like many good things, the advantages of Quartz Quality silicates come in 3's.

If the white water in your mill is excessively acid, you should know how Quartz Quality is helping many mills overcome this condition. No mystery, just chemistry.

Likewise the regular use of Quartz Quality silicate in the beater softens the water and keeps the pipe lines clean.

Ask for further information about water treatment with Quartz Quality silicates.

Philadelphia Quartz Company
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Miscellaneous Markets

Office of the PAPER TRADE JOURNAL,
Wednesday, September 19, 1928.

BLANC FIXE.—Some improvement developed in the blanc fixe market. Demand for the pulp and the powder was better and prices were firm. The pulp is quoted at from $42.50 to $45.00 per ton, in bulk, and the powder is selling at from 3½ cents to 3⅝ cents a pound, in barrels, at works.

BLEACHING POWDER.—The bleaching powder market was moderately active during the past week. Shipments against contract were fairly numerous. Prices remain unaltered. Bleaching powder is selling at from $2.00 to $2.35 per 100 pounds, in large drums, at works, according to quantity and grade.

CASEIN.—Demand for casein was more active than of late. Contract shipments are proceeding in good volume. Domestic casein is now quoted at from 16¼ cents to 17 cents a pound, while imported casein is still offered at from 16¾ cents to 17 cents a pound, all in bags, car lot quantities.

CAUSTIC SODA.—Consumption of caustic soda is being maintained in a satisfactory manner. Prices are generally holding to former levels. Solid caustic soda is quoted at from $2.90 to $2.95 per 100 pounds. The flake and the ground are selling at from $3.30 to $3.35 per 100 pounds, in large drums, at works.

CHINA CLAY.—Steadiness prevails in the china clay market. Prices are holding to schedule without difficulty. Imported china clay is still selling at from $15 to $25 a ton, ship side. Domestic paper making clay is quoted at from $8 to $9 a ton, at mine, and pulverized at from $10 to $12 a ton.

CHLORINE.—The chlorine market is in a sound position. Contract withdrawals are proceeding at a steady pace. Prices remain unchanged. Chlorine is quoted at 3½ cents a pound, in tanks, or multi-unit cars, at works, on contract orders. The spot quotation ranges from 3¾ cents to 4 cents a pound.

ROSIN.—Conditions in the rosin market have improved. At the naval stores, the grades of gum rosin used in the paper mills are quoted at from $9.35 to $9.45 per 280 pounds, ex dock, in barrels. Wood rosin is now offered at from $6.75 to $7.55 per 280 pounds, at southern shipping points.

SALT CAKE.—Trading in the salt cake market is gradually becoming more active. Manufacturers are generally well sold ahead on contract. Prices remain steady. Salt cake is quoted at from $15 to $17 a ton, in bulk, at works. Chrome salt cake is selling at from $14 to $15 a ton, in bulk, at works.

SODA ASH.—The soda ash market is exhibiting a strong undertone. Demand for this product is fairly persistent and supplies are moving into consumption regularly. Contract quotations on soda ash, in car lots, at works, per 100 pounds, are still as follows: in bags, $1.32½, and in barrels, $1.55.

STARCH.—No further changes have transpired in the starch market and prices are generally holding to previously quoted levels. Shipments against contract are moving at a normal pace. Special paper making starch is quoted at $4.07 per 100 pounds, in bags, and at $4.24 per 100 pounds, in barrels.

SULPHATE OF ALUMINA.—Contract withdrawals of sulphate of alumina are moving in excellent volume. Prices remain unaltered. Commercial grades of sulphate of alumina are quoted at from $1.40 to $1.55 per 100 pounds. The iron free is offered at from $1.90 to $2.05 per 100 pounds, in bags, at works.

SULPHUR.—Business in the sulphur market is quite satisfactory. Demand from the paper mills is persistent and the movement against contract is heavy. Prices are holding to schedule. Sulphur is still quoted at from $18 to $19 a ton, in bulk, at mine, on contract orders. The spot quotation is $20 per ton.

TALC.—Production of talc is being maintained in satisfactory volume. Offerings of this product are large enough to take care of current requirements. Domestic talc is quoted at from $16 to $18 a ton, in bulk, at eastern mines. Imported talc is selling at from $18 to $20 a ton, ship side.

Market Quotations

Paper

(F. o. b. Mill)

Ledgers	11.00	@38.00
Bonds	9.00	@45.00
Writings—		
Extra Superfine	14.00	@32.00
Superfine	14.00	@32.00
Tub sized	10.00	@15.00
Engine sized	8.00	@11.00
News—		
Rolls, contract	3.25	@ —
Rolls, transient	3.25	@ 3.50
Sheets	3.65	@ 3.85
Side Runs	3.00	@ 3.75
Book, Cased—		
S. & S. C.	6.35	@ 7.75
M. F.	6.25	@ 7.75
Coated and Enamel	8.00	@15.00
Lithograph	8.00	@15.00
Tissues—Per Ream—		
White No. 1	.75	@ 1.00
Anti-Tarnish	1.10	@ 1.90
Colored	1.00	@ 2.00
White No. 2	.75	@ .85
Kraft	.90	@ 1.00
Manila	.75	@ .85
Kraft—		
No. 1 Domestic	6.25	@ 6.50
No. 2 Domestic	4.25	@ 4.50
Southern	4.00	@ 4.25
Imported	6.50	@ 7.00
Manila—		
No. 1 Jute	9.00	@ 9.25
No. 2 Jute	7.75	@ 8.50
No. 1 Wood	4.75	@ 5.25
No. 2 Wood	4.00	@ 4.50
Butchers	3.75	@ 4.25
Fibre Papers—		
No. 1 Fibre	5.00	@ 5.50
No. 2 Fibre	4.75	@ 5.25
Common Bogus	2.75	@ 3.00
Screenings	3.00	@ 3.25
Card Middles	4.00	@ 5.00
Glassine—		
Bleached, basis 25 lbs.	13.00	@16.00
Bleached, basis 20 lbs.	15.00	@16.00

(Delivered New York)

Boards—per ton—		
News	50.00	@52.50
Straw	52.50	@55.00
Chip	47.50	@50.00
Binders' Boards	65.00	@67.50
Sgl. Mla. Ll. Chip	51.00	@53.50
Wood Pulp	80.00	@85.00
Container	67.50	@72.50
85 test Jute Liner	57.50	@60.00

Mechanical Pulp

(Ex-Dock)

No. 1 Imported—		
Moist	30.00	@31.25
Dry	32.00	@34.00

(F. o. b. Mill)

No. 1 Domestic	26.00	@29.00
Screenings	15.00	@20.00

Chemical Pulp

(Ex-Dock, Atlantic Ports)

Sulphite (Imported)—		
Bleached	3.65	@ 4.25
Easy Bleaching	2.70	@ 2.90
No. 1 strong unbleached	2.60	@ 2.70
Mitscherlich unbleached	2.65	@ 3.25
No. 2 strong unbleached	2.50	@ 2.60
No. 1 Kraft	2.60	@ 2.75
No. 2 Kraft	2.40	@ 2.50
Sulphate—		
Bleached	3.75	@ 3.85

(F. o. b. Pulp Mill)

Sulphite (Domestic)—		
Bleached	3.40	@ 4.75
Easy Bleaching Sulphite	2.60	@ 2.75
News Sulphite	2.40	@ 2.65
Mitscherlich	3.00	@ 3.70
Kraft (Domestic)	2.70	@ 3.30
Soda Bleached	3.15	@ 3.50
Sulphate Screenings—		
Coarse	.75	@ .85
Refined	1.50	@ 1.65

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—		
New White, No. 1	11.00	@11.50
New White, No. 2	8.00	@ 8.50
Silesias No. 1	7.25	@ 7.75
New Unbleached	10.50	@11.00
Washables	4.25	@ 4.75
Fancy	5.50	@ 6.00
Blue Overall	6.75	@ 7.25
New Blue Prints	5.25	@ 5.50
New Soft Blacks	5.25	@ 5.75
Mixed Khaki Cuttings	4.75	@ 5.25
Pink Corset Cuttings	8.00	@ 8.50
O. D. Khaki Cuttings	5.25	@ 5.75
Men's Corduroy	3.75	@ 4.25
New Mixed Blacks	3.50	@ 3.75

Old Rags

White, No. 1—		
Repacked	5.50	@ 6.00
Miscellaneous	4.50	@ 5.00
White, No. 2—		
Repacked	3.00	@ 3.50
Miscellaneous	2.50	@ 2.75
St. Soiled, White	2.00	@ 2.15
Thirds and Blues—		
Repacked	2.25	@ 2.50
Miscellaneous	1.75	@ 2.00
Black Stockings	3.25	@ 3.75
Roofing Rags—		
Cloth Strippings	1.70	@ 1.80
No. 1	1.70	@ 1.80
No. 2	1.55	@ 1.65
No. 3	1.30	@ 1.40
No. 4	1.25	@ 1.35
No. 5A	.95	@ 1.05

Foreign Rags

New Dark Cuttings	2.50	@ 3.00
New Mixed Cuttings	2.75	@ 3.25
New Light Silesias	7.00	@ 7.50
Light Flannelettes	7.50	@ 8.00
Unbleached Cottons	10.00	@11.00
New White Cuttings	10.50	@11.50
New Light Oxfords	7.00	@ 7.50
New Light Prints	5.50	@ 6.50
No. 1 White Linens	7.25	@ 8.00
No. 2 White Linens	5.50	@ 6.25
No. 3 White Linens	4.50	@ 5.00
No. 4 White Linens	3.00	@ 3.50
Old Extra Light Prints	2.75	@ 3.25
Ord. Light Prints	2.25	@ 2.50
Med. Light Prints	1.90	@ 2.10
Dutch Blue Cottons	2.25	@ 2.50
German Blue Linens	2.50	@ 2.75
German Blue Cottons	2.00	@ 2.25
Checks and Blues	1.75	@ 1.90
Lindsay Garments	1.90	@ 2.00
Dark Cottons	1.65	@ 1.75
Old Shopperies	1.55	@ 1.65
New Shopperies	1.50	@ 1.60
French Blues	2.10	@ 2.25

Old Rope and Bagging

(Prices to Mill f. o. b. N. Y.)

Gunny No. 1—		
Foreign	1.60	@ 1.70
Domestic	1.70	@ 1.75
Wool Tares, light	1.60	@ 1.65
Wool Tares, heavy	1.60	@ 1.65
Bright Bagging	1.60	@ 1.65
Small Mixed Rope	1.25	@ 1.40
Manila Rope—		
Foreign	3.35	@ 3.65
Domestic	3.25	@ 4.00
New Burlap Cut	2.75	@ 3.00
Hessian Jute Threads—		
Foreign	3.50	@ 4.00
Domestic	3.25	@ 3.50

Old Waste Papers

(F. o. b. New York)

Shavings—		
Hard, white, No. 1	3.25	@ 3.50
Hard, white, No. 2	2.40	@ 2.55
Soft, White, No. 1	2.35	@ 2.50
White envelope cuttings	3.25	@ 3.50
Flat Stock—		
Stitchless	1.60	@ 1.70
Overissue Mag.	1.60	@ 1.70
Solid Flat Book	1.45	@ 1.50
Crumpled No. 1	1.05	@ 1.15
Solid Book Ledger	2.00	@ 2.10
Ledger Stock	1.60	@ 1.75
Manilas—		
New B. B. Chips	.65	@ .75
New Env. Cut	2.40	@ 2.60
New Cuttings	1.60	@ 1.85
Extra No. 1 old	1.25	@ 1.35
Print	.80	@ .85
Container	.70	@ .75
Bogus Wrapper	.75	@ .85
Old Kraft Machine Compressed bales	1.80	@ 1.90
News—		
No. 1 White News	1.75	@ 1.80
Strictly Overissue	.85	@ .95
Strictly Folded	.70	@ .80
No. 1 Mixed Paper	.60	@ .65
Common Paper	.35	@ .40

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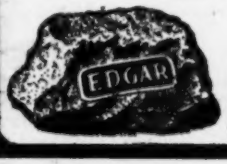

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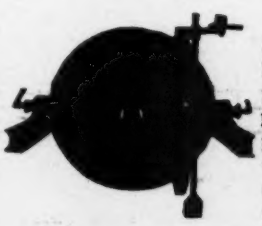

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Twines

(F. o. b. Mill)

Cotton—			
No. 1	.39	@	.40
No. 2	.37	@	.38
No. 3	.36	@	.37
B. C., 18 basis	.38	@	.40
A. B. Italian, 18 basis	.48	@	.53
Finished Jute—			
Dark 18 basis	.24	@	.25
Light 18 basis	.27	@	.28
Jute Wrapping, 3-6 Ply—			
No. 1	.21	@	.23
No. 2	.20	@	.22
Tube Rope—			
4-ply and larger	.18	@	.19
Fine Tube Yarn—			
3-ply and larger	.23	@	.27
4-ply	.24	@	.28
3-ply	.26	@	.30
Unfinished India—			
Basis	.16	@	.17
Paper Makers Twine Balls	.13	@	.15
Box Twine, 2-3 ply	.17	@	.19
Jute Rope	.21	@	.23
Ameri. Hemp, 6	.29	@	.31
Sisal Hay Rope—			
No. 1 Basis	.18	@	.20
No. 2 Basis	.16	@	.18
Sisal Lath Yarn—			
No. 1	.16	@	.18
No. 2	.14	@	.16
Manila Rope	.24	@	.26

CHICAGO

All Rag Bond	.35	@	.41
No. 1 Rag Bond	.25	@	.35
No. 2 Rag Bond	.14	@	.25
Water Marked Sulphite Bond	.09	@	.12
Sulphite Bond	.06¾	@	.11
Superfine writing	.18	@	.24
No. 1 fine writing	.14	@	.18
No. 2 fine writing	.12	@	.14
No. 3 fine writing	.08½	@	.12
No. 1 M. F. Book	.06½	@	.07½
No. 2 M. F. Book	.05½	@	.06¾
No. 1 S.&S.C. Book	.06¾	@	.07¾
No. 2 S.&S.C. Book	.05¾	@	.06½
Coated Book	.07½	@	.12
Coated Label	.07½	@	.10
News—Roll, mill	.03½	@	.04¼
News—Sheets, mill	.03¾	@	.04¾
No. 1 Manila	.04¼	@	.05¾
No. 1 Fibre	.04¾	@	.05¾
No. 2 Manila	.04¼	@	.04¾
Butcher's Manila	.04	@	.04½
No. 1 Kraft	.06¼	@	.06½
Southern Kraft	.03¾	@	.04
No. 2 Kraft	.04	@	.04¼
Wood Tag Boards	.04¼	@	.06¼
Sulphite Screenings	.03	@	.03¼
Manila Tissue—			
24x36 Sheet	.07	@	.07¾
White Tissue—			
20x30 Sheet	.07¼	@	.07½
Boards, per ton—			
(Delivered Central Territory)			
Plain Chip	37.50	@	41.00
Solid News	47.50	@	—
Manila Lined Chip	55.00	@	—
Container Lined—			
(Delivered Central Territory)			
85 Test	65.00	@	70.00
100 Test	70.00	@	—

Old Papers

(F. o. b. Chicago)

Shavings—			
No. 1 Hard White	2.80	@	2.90
White Env. Cuttings	2.90	@	3.00
No. 1 Soft Shavings	2.50	@	2.60
No. 1 Mixed	1.00	@	1.05
No. 2 Mixed	.90	@	1.00
Ledger & Writings	1.55	@	1.65
Solid Books	1.25	@	1.35
Blanks	1.70	@	1.80
Kraffs	1.90	@	2.00
New Kraft Cuts	2.25	@	2.35
Manila Envelope Cuttings	2.00	@	2.10
Ex. No. 1 Manila	1.55	@	1.65
Print Manila	.90	@	1.00
Folded News (overissue)	.65	@	.75
Old Newspapers—			
No. 1	.65	@	.75
No. 2	.60	@	.65
Mixed Papers—			
No. 1	.70	@	.80
Roofing Stocks—			
(F. o. b. Chicago, net cash)			
No. 1	30.00	@	—
No. 2	28.00	@	—

PHILADELPHIA

Paper

(F. o. b. Mill)

Bonds	.07	@	.40
Ledgers	.11	@	.40
Writings—			
Superfine	.13	@	.18
Extra fine	—	@	.22
Fine	.20	@	.26½
Fine, No. 2	.16	@	.25
Fine, No. 3	.12	@	.20
Book, M. F.	.06	@	.07
Book, S. S. & C.	.06	@	.07½
Book, Coated	.11	@	.16
Coated Lithograph	.09	@	.12
Labe	.09	@	.12
New	.03¼	@	.04
No. 1 Jute Manila	.08½	@	.09
Manil Sul., No. 1	.04½	@	.06
Manil No. 2	.04	@	.04½
No. 2 Kraft	.05	@	.05½
No. 1 Kraft	.06	@	.06½
Common Bogus	.02¾	@	—
Straw Board	52.50	@	75.00
News Board	45.00	@	—
Chip Board	42.50	@	—
Wood Pulp Board	4.50	@	5.00
(Carload Lots)			
Binder Boards—			
No. 1, per ton	80.00		
No. 2, per ton	75.00		
Carload lots	60.00	@	70.00
Tarred Felts—			
Regular	53.00	@	55.00
Slaters (per roll)	.84	@	.94
Best Tarred, 1-ply (per roll)	1.85	@	1.95
Best Tarred, 2-ply (per roll)	1.44	@	1.54
Best Tarred, 3-ply	1.93	@	2.08

Domestic Rags (New)

(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White, No. 1	.11½	@	.12
New White, No. 2	.07	@	.07½
Light Silesias	.07	@	.07½
Silesias, No. 1	.07½	@	.08
Black Silesia, soft	.05	@	.05½
New Unbleached	.10½	@	.11
Washable	.03½	@	.04
Fancy	.05½	@	.06
Cottons—according to grades—			
Blue Overall	.07½	@	nominal
New Blue	—	@	.04
New Black Soft	.05½	@	.06
New Light Seconds	.03	@	.03½
Khaki Cuttings	.04½	@	.05
Corduroy	.03	@	.03½
New Canvas	.08	@	.09½
New Black Mixed	.05	@	.05½

Bagging

(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	1.75	@	2.00
Domestic	1.75	@	2.00
Manila Rope	3.50	@	4.00
Sisal Rope	1.50	@	—
Mixed Rope	1.10	@	1.25
Scrap Burlaps	1.40	@	1.50
Wool Tares, heavy	3.00	@	—
Mixed Strings	1.15	@	1.25
No. 1, New Light Burlap	2.50	@	2.75
New Burlap Cuttings	—	@	2.50

Old Papers

(F. o. b. Phila.)

Shavings—			
No. 1 Hard White	3.20	@	3.25
No. 2 Hard White	2.75	@	3.00
No. 1 Soft White	2.50	@	2.60
No. 2 Soft White	1.90	@	2.00
No. 1 Mixed	1.50	@	1.60
No. 2 Mixed	.90	@	1.00
Solid Ledger Stock	1.60	@	1.65
Writing Paper	1.50	@	1.60
No. 1 Books, heavy	1.50	@	1.60
No. 2 Books, light	1.20	@	1.25
No. 1 New Manila	2.40	@	2.50
No. 1 Old Manila	1.50	@	1.60
Print Manila	.95	@	1.00
Container Manila	.85	@	.90
Old Kraft	2.25	@	2.50
Common Paper	.55	@	.60
No. 1 Mixed Paper	.55	@	.60
Straw Board, Chip	.65	@	.75
Binders Board, Chip	.65	@	.75
Overissue News	.85	@	.90
Old Newspaper	.60	@	.65

Domestic Rags (Old)

White, No. 1—			
Repacked	4.25	@	4.50
Miscellaneous	3.50	@	4.00
White, No. 2—			
Repacked	02¼	@	02¾
Miscellaneous	.01¾	@	.02
Ironing Blues—			
Repacked	2.00	@	2.25
Miscellaneous	1.80	@	2.00
Black Stockings	3.75	@	4.00
Roonng Stock—			
No. 1	1.65	@	1.75
No. 2	1.40	@	1.50
No. 3	1.25	@	—
No. 4	1.25	@	—
No. 5A	.85	@	.90
B	.80	@	.85
C	.70	@	.80

BOSTON

Paper

(F. o. b. Mill)

Ledgers—			
Sulphite	.07½	@	.15
Rag content	.15	@	.30
All rag	.38	@	.52½
Bonds—			
Sulphite	.06½	@	.11½
Rag content	.15	@	.30
All rag	.36½	@	.65
Writings	.07	@	.20
Superfines	.11	@	.31
News	.03½	@	.04
Book, Super	.06	@	.09
Book, M. F.	.05¾	@	.08½
Book, Coated	.08½	@	.20
Coated Litho	.09	@	.12
Label	.09½	@	.15
Jute Manila No. 1	.11	@	.13
Manila, Sul. No. 1	.04¾	@	.06½
Manila, Sul. No. 2	.03¾	@	.04½
No. 1 Kraft	.03½	@	.06½
No. 2 Kraft	.04	@	.04¾
Common Bogus	.02	@	.02¾
Delivered New England points			
Straw Boards, rolls .009			52.50
Straw Board in Sheets, basis 35s to 70s	54.50	@	55.00
Filled News Board			47.50
Chip Board			45.00
Single Manila Pulp Lined Board	52.50	@	57.50
Single White, Patent Coated Newsboard Bender	70.00	@	80.00
Wood Pulp Board	80.00	@	85.00
Binder Boards	70.00	@	75.00
(F. o. b. Mill)			
Tarred Felts—			
Regular, carload lots	65.00	@	—

Old Papers

(F. o. b. Boston)

Shavings—			
No. 1 Hard White	3.25	@	3.75
No. 2 Hard White	2.60	@	2.90
No. 1 Soft White	2.60	@	—
No. 1 Mixed	1.10	@	1.15
No. 2 Mixed	.85	@	.90
Solid Ledger Stock	2.35	@	2.45
No. 1 Books, Heavy	1.45	@	1.55
No. 1 Books, Light	—	@	1.15
Manila Env. Cuttings	2.00	@	2.25
No. 1 Old Manila	1.20	@	1.25
White Blank News	1.55	@	1.65
Old Kraft	2.00	@	2.10
Print Manila	.80	@	.90
No. 1 Mixed Paper	—	@	.65
Overissue News	.70	@	.80
Old Newspapers	.65	@	.67½
Box Board, Chip	.65	@	—

Bagging

(Price f. o. b. Boston)

Gunny No. 1—			
Foreign	—	@	1.60
Manila Rope—			
Foreign	3.50	@	—
Domestic	3.25	@	3.50
Mixed Strings	.90	@	1.00
Scrap Burlaps	1.45	@	1.50
Scrap Sisal	1.25	@	1.50
Scrap Sisal for shredding	1.50	@	1.65
Wool Tares, heavy	—	@	1.50
New Burlap Cutting	2.00	@	2.25

Domestic Rags (New)

(Price f. o. b. Boston)

Shirt Cuttings—			
New White No. 1	.09	@	.10
Silesias, No. 1	.06	@	.06½
New Unbleached	.09½	@	.10
Fancy	.04	@	.04½
Washable	.04	@	.04½
Cottons—According to grades			
Blue Overalls	.06	@	.06½
New Black, soft	.04	@	.04½
Khaki Cuttings	.04	@	.04¾
Corduroy	.03	@	.03½
New Canvas	.08	@	.08¾

Domestic Rags (Old)

(Price f. o. b. Boston)

Canvas	.04½	@	—
White No. 1—			
Repacked	4.75	@	5.25
Miscellaneous	5.00	@	—
White No. 2—			
Repacked	.04½	@	.05
Miscellaneous	.03½	@	.04
Thirds and Blues—			
Repacked	2.00	@	2.15
Miscellaneous	1.75	@	1.90
Roofing Stock—			
No. 1	1.75	@	1.85
No. 2	1.45	@	1.55
No. 3	1.05	@	1.10
No. 4	1.10	@	1.15

Foreign Rags

(F. o. b. Boston)

Dark Cottons	1.65	@	1.70
New No. 1 Shirt Cuttings	9.00	@	10.00
Dutch Blues	2.00	@	2.12½
Lace Curtains	5.00	@	5.50
New Checks & Blues	4.50	@	4.65
Old Fustians	1.90	@	—

TORONTO

Paper

(F. o. b. Mill)

Bond—			
No. 1 Sulphite	.12½	@	—
No. 2 Sulphite	.10¾	@	—
No. 1 Colored	.13½	@	—
No. 2 Colored	.11¼	@	—
Ledgers (sulphite)	—	@	—
Ledgers, No. 1	.36	@	—
Ledgers, No. 2	.27	@	—
Writing	.09½	@	.10
News f. o. b. Mills—			
Rolls (carloads)	3.25	@	—
Sheets (carloads)	3.75	@	—
Sheets (2 tons or over)	4.00	@	—
Book—			
No. 1 M. F. (carloads)	7.50	@	—
No. 2 M. F. (carloads)	7.25	@	—
No. 3 M. F. (carloads)	7.00	@	—
No. 1 S. C. (carloads)	8.00	@	—
No. 2 S. C. (carloads)	7.75	@	—
No. 3 S. C. (carloads)	7.50	@	—
No. 1 Coated and Litho	14.50	@	—
No. 2 Coated and Litho	13.50	@	—
No. 3 Coated and Litho	12.75	@	—
Coated tinted	.15	@	—
Wrapping—			
Rag Brown	4.95	@	—
White Wrap	5.25	@	—
"B" Manila	5.80	@	—
No. 1 Manila	6.65	@	—
Fiber	6.65	@	—
Kraft, M. F.	7.00	@	—
M. G.	7.00	@	—

Pulp

(F. o. b. Mill)

Ground Wood	30.00	@	31.00
Sulphite easy bleaching	62.00	@	—
Sulphite news grade	62.00	@	—
Sulphite, bleached	75.00	@	—
Sulphate	65.00	@	—

Old Waste Paper

(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut	3.00	@	—
Soft White Book Shavings	2.85	@	—
White Blk, News	1.50	@	—
Book and Ledger—			
Flat Magazine and Book Stock (old)	1.40	@	—
Light and Crumpled Book Stock	1.25	@	—
Ledgers and Writings	1.50	@	—
Solid Ledgers	1.50	@	—
Manilas—			
New Manila Cut	1.50	@	—
Printed Manilas	1.00	@	—
Kraft	2.25	@	—
News and Scrap—			
Strictly Overissue	.80	@	—
Strictly Folded	.80	@	—
No. 1 Mixed Paper	.65	@	—

Domestic Rags

(Price to mills, f. o. b. Toronto)

No. 1 White Shirt Cuttings	.11½	@	—
Fancy Shirt Cuttings	05½	@	—

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PAPER TRADE JOURNAL

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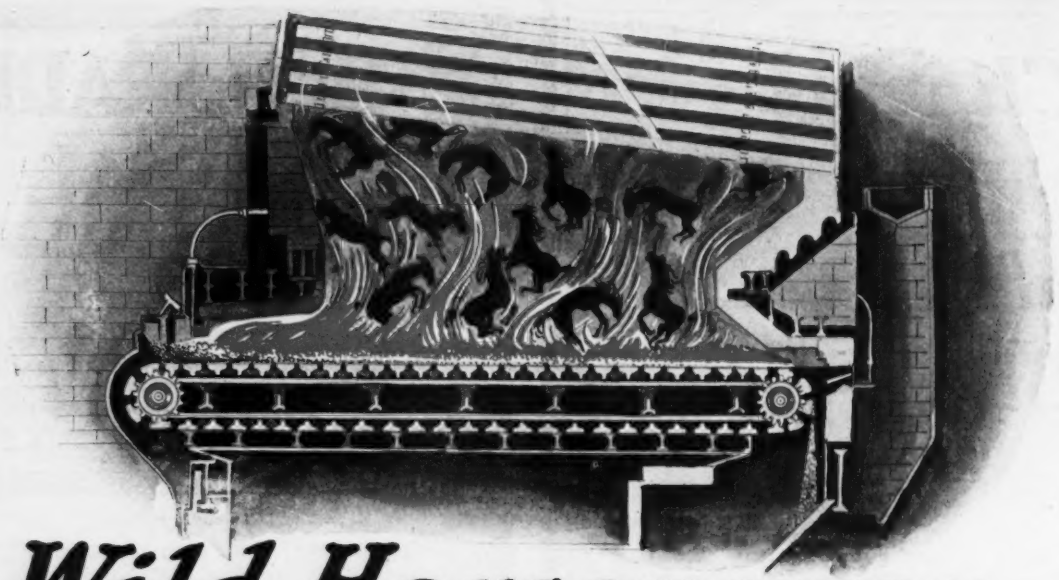

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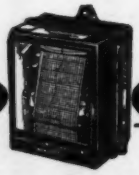

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